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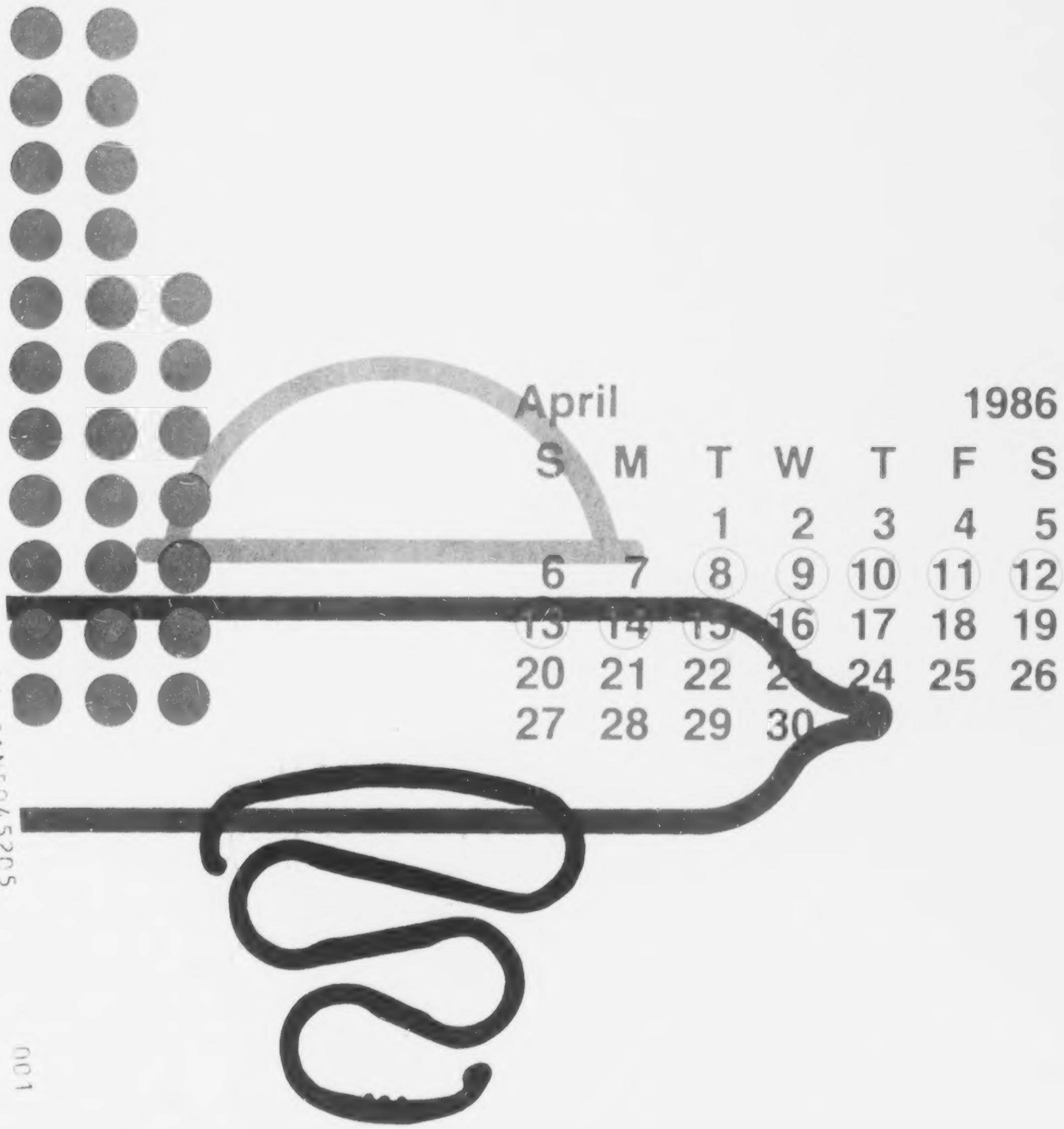
Family Planning Perspectives

Volume 18, Number 5, September/October 1986

Interstate Differences in Teenage Pregnancy
The Public Costs of Teenage Childbearing

Contraceptive Failure Among U.S. Women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Please see next page for brief summary of prescribing information.
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LOESTRIN®

(norethindrone acetate and ethinyl estradiol tablets, USP) See section under **Special Notes on Administration** and **How Supplied.**

Before prescribing, please see full prescribing information. A Brief Summary follows:

DESCRIPTION

Loestrin Products are progestogen-estrogen combinations.

INDICATIONS AND USAGE

Loestrin Products are indicated for the prevention of pregnancy in women who elect to use oral contraceptives.

In clinical trials with Loestrin 1/20 involving 15,899 therapy cycles, there was a pregnancy rate of 0.75 per 100 woman-years. In clinical trials with Loestrin 1.5/30 involving 17,139 cycles, there was a pregnancy rate of 0.49 per 100 woman-years.

Dose-related risk of thromboembolism from oral contraceptives: Studies have shown a positive association between the dose of estrogens in oral contraceptives and the risk of thromboembolism. It is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The oral contraceptive prescribed for any given patient should be that product which contains the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance.

CONTRAINDICATIONS

1. Thrombophlebitis or thromboembolic disorders.
2. A past history of deep vein thrombophlebitis or thromboembolic disorders.
3. Cerebral vascular or coronary artery disease.
4. Known or suspected carcinoma of the breast.
5. Known or suspected estrogen-dependent neoplasia.
6. Undiagnosed abnormal genital bleeding.
7. Known or suspected pregnancy (See No. 5 under WARNINGS).
8. Benign or malignant liver tumor which developed during the use of oral contraceptives or other estrogen-containing products.

WARNINGS

Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.

The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with the use of oral contraceptives is well established. Studies have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic.

Cerebrovascular disorders: In a collaborative study in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than nonusers, and the risk of thrombotic stroke was 4 to 9.5 times greater.

Myocardial infarction: An increased risk of myocardial infarction associated with oral contraceptives has been reported confirming a previously suspected association. These studies found that the greater the number of underlying risk factors (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) for coronary artery disease, the higher the risk of developing myocardial infarction, regardless of whether the patient was an oral contraceptive user or not. Oral contraceptives, however, were found to be a clear additional risk factor.

It has been estimated that users who do not smoke (smoking is considered a major predisposing condition to myocardial infarction) are about twice as likely to have a fatal myocardial infarction as nonusers who do not smoke. Oral contraceptive users who are smokers have about a fivefold increased risk of fatal infarction compared to users who do not smoke, but about a tenfold to twelvefold increased risk compared to nonusers who do not smoke. The amount of smoking is also an important factor.

Risk of dose: In an analysis of data, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in oral contraceptives. However, the quantity of estrogen may not be the sole factor involved.

Persistence of Risk: In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of oral contraceptive use for cerebrovascular disease and 9 years for myocardial infarction. In addition, a prospective study suggested the persistence of risk for subarachnoid hemorrhage.

Estimate of excess mortality from circulatory diseases: The risk of diseases of the circulatory system is concentrated in older women, in those with a long duration of use, and in cigarette smokers.

A study of available data from a variety of sources concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of oral contraceptives in women over 40 who smoke.

The risk of thromboembolic and thrombotic diseases associated with oral contraceptives increases with age after approximately age 30 and, for myocardial infarction, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia, and especially by cigarette smoking.

The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders. Should any occur or be suspected, the drug should be discontinued immediately.

A fourfold to sixfold increased risk of postsurgery thromboembolic complications has been reported in users. If feasible, oral contraceptives should be discontinued at least four weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization.

2. *Ocular Lesions.* Neuro-ocular lesions, such as optic neuritis or retinal thrombosis, have been associated with the use of oral contraceptives. Discontinue the oral contraceptive if there is unexplained sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions.

3. *Carcinoma.* Long-term continuous administration of estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver.

In humans, an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women has been reported. However, there is no evidence suggesting increased risk of endometrial cancer in users of conventional combination or progestogen-only oral contraceptives.

Studies found no evidence of increase in breast cancer in women taking oral contraceptives; however, an excess risk in users with documented benign breast disease was reported.

There is no confirmed evidence of an increased risk of cancer associated with oral contraceptives. Close clinical surveillance of users is, nevertheless, essential. In cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms, should be monitored with particular care.

4. *Hepatic Tumors.* Benign hepatic adenomas have been found to be associated with oral contraceptives. Because hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage, they should be considered in women presenting abdominal pain and tenderness, abdominal mass, or shock.

A few cases of hepatocellular carcinoma have been reported in women taking oral contraceptives. The relationship of these drugs to this type of malignancy is not known at this time.

5. *Usage in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* During early pregnancy female sex hormones may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. Although there is no evidence at the present time that oral contraceptives further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use oral contraceptives instead of other methods of contraception.

An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of oral contraceptives in pregnancy.

In the past female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well controlled studies that progestogens are effective for these uses.

There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing oral contraceptives.

Pregnancy should be ruled out before continuing an oral contraceptive in any patient who has missed two consecutive menstrual periods. If the patient has not adhered to the schedule, the possibility of pregnancy should be considered at the time of the first missed period, and oral contraceptives should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed.

Women who discontinue oral contraceptives with the intent of becoming pregnant should use an alternate form of contraception for a period of time before attempting to conceive.

Administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy.

6. *Gallbladder Disease.* Studies report an increased risk of surgically confirmed gallbladder disease in users of oral contraceptives.

7. *Carbohydrate and Lipid Metabolic Effects.* Decreased glucose tolerance has been observed in a significant percentage of patients. Prediabetic and diabetic patients should be carefully observed while receiving oral contraceptives.

An increase in triglycerides and total phospholipids has been observed.

8. *Elevated Blood Pressure.* An increase in blood pressure has been reported in patients receiving oral contraceptives. The prevalence in users increases with longer exposure. Age is also strongly correlated with development of hypertension. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure.

9. *Headache.* Onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of oral contraceptives.

10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and amenorrhea are frequent reasons for patients discontinuing oral contraceptives. In breakthrough bleeding, nonfunctional causes should be borne in mind. In undiagnosed abnormal bleeding from the vagina adequate diagnostic measures are indicated to rule out pregnancy or malignancy.

Women with a past history of oligomenorrhea or secondary amenorrhea or young women without regular cycles should be advised that they may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of oral contraceptives.

11. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures.

12. *Breast Feeding.* Oral contraceptives may interfere with lactation. Furthermore, a small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs.

PRECAUTIONS

1. A complete medical and family history should be taken prior to the initiation of oral contraceptives. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen, and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, oral contraceptives should not be prescribed for longer than one year without another examination.

2. Preexisting uterine leiomyomata may increase in size.

3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree.

4. Oral contraceptives may cause fluid retention and should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated.

5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice. If jaundice develops, the medication should be discontinued.

6. Steroid hormones may be poorly metabolized and should be administered with caution in patients with impaired liver function.

7. Users may have disturbances in normal tryptophan metabolism which may result in a relative pyridoxine deficiency.

8. Serum folate levels may be depressed.

9. The pathologist should be advised of oral contraceptive therapy when relevant specimens are submitted.

10. Certain endocrine and liver function tests and blood components may be affected: (a) Increased sulfobromophthalein retention. (b) Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. (c) Increased thyroid-binding globulin (TBG) leading to increased circulating total thyroid hormone. (d) Decreased pregnanediol excretion. (e) Reduced response to metyrapone test.

Drug interactions: Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with oral contraceptives: Thrombophlebitis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gallbladder disease, benign hepatomas, congenital anomalies.

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed: Mesenteric thrombosis, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, dysmenorrhea, amenorrhea during and after treatment, temporary infertility after discontinuance of treatment, edema, chloasma or melasma, breast changes, change in weight, change in cervical erosion and cervical secretion, possible diminution in lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, change in corneal curvature, intolerance to contact lenses.

The following adverse reactions have been reported and the association has been neither confirmed nor refuted: Premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, vaginitis, porphyria.

Special Notes on Administration

Loestrin **21**: Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after discontinuing medication.

Loestrin **Fe**: Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after the brown ferrous fumarate tablets have been started.

Because of the relatively low estrogenic content, Loestrin (norethindrone acetate and ethinyl estradiol tablets, USP) is not a good cyclic regulator. There are patients whose inherent hormone balance will require larger amounts of estrogen than that contained in Loestrin to achieve cyclic regularity. These patients experience altered bleeding patterns, which do not conform to treatment schedules. It is important that patients adhere to the dosage schedule regardless of when bleeding occurs.

The physician should be alert to the fact that the irregular bleeding patterns could mask bleeding from organic cause, and appropriate diagnostic measures should be taken if the bleeding persists or continues after changing to a higher estrogen-content product.

After several months, bleeding may be reduced to a virtual absence; reduced flow may be a result of medication and not indicative of pregnancy.

HOW SUPPLIED

Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets. Each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

Caution—Federal law prohibits dispensing without prescription.

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Contraceptive Failure in the United States: Estimates from the 1982 National Survey Of Family Growth

By William R. Grady, Mark D. Hayward and Junichi Yagi

Summary

A multivariate life-table analysis of national survey data from 1982 indicates that among currently married women, the pill and IUD have the lowest use-failure rates. During the first year of use, about three percent of pill users and six percent of IUD users experience an unintended pregnancy. Failure rates for the remaining methods range from 14 percent for the condom to 22 percent for spermicides; between these lie rhythm and natural family planning (16 percent), the diaphragm (17 percent) and other methods, mainly withdrawal, douche and abstinence. Married women using no contraceptive method experience an unintended pregnancy rate of 40 percent during the first year of unprotected intercourse.

A woman's age, pregnancy intention (either to delay or to prevent births), parity and income all have significant effects on the risk of unintended pregnancy. The risk generally declines with age, except for women attempting to prevent an unwanted pregnancy, among whom women under 20 have lower failure rates than do those 20–29 years of age. As expected, women attempting to prevent an unwanted pregnancy have lower failure rates than do those seeking to delay a wanted pregnancy, with the difference being greatest for women under 20 years of age and smallest for 20–29-year-olds. Use-failure rates among low-income women are higher than those among women with larger family incomes, while low-parity women have lower failure rates than do women of higher parity.

On average, standardized use-failure rates for single women are lower than those for married women, probably because of a lower average level of intercourse among single women. In addition, these rates are understated because of the substantial underreporting of abortion among single women; if abortion reporting were complete, failure rates would be about 1.4 times as high as they appear here, and thus would be close to those of married women. Differences in the risk of unintended pregnancy among single women show a number of similarities with those seen among married women: Use of the pill and IUD is associated with the lowest failure rates, reliance on the condom is associated with intermediate failure rates, and use of spermicides is linked with the highest failure rates. However, while rhythm and the diaphragm exhibit use-failure rates that are among the highest found for single women, failure rates for these methods are at intermediate levels among married women. Another exception is for "other" methods, for which use-failure rates are intermediate among single women but very high among married women. One-third of single women who use no contraceptive method have an unintended pregnancy during the first year of unprotected intercourse. The overall effects of family income and parity are consistent among married and single women, but the effects of age, race and contraceptive intention differ.

Measuring Contraceptive Effectiveness

In their original analysis of contraceptive failure rates calculated from the 1973 and 1976 National Surveys of Family Growth (NSFG), Allen L. Schirm and his colleagues claimed that "strictly speaking, the effectiveness of a method is the *reduction* its use brings to the risk or probability of conception when no method is used."[1] Thus, to determine the true effectiveness of a particular method, the risk of accidental pregnancy during its use should be compared with the risk associated with the use of no method. While this comparison may seem simple, the risk related to the use of no method cannot be readily determined, since women may be using no method because of subfecundity or very low coital frequency, to suggest just two reasons. As a result, earlier research in this area has concentrated on the rate or probability of contraceptive failure; comparisons of such rates for various methods of birth control provide at least an indicator of relative effectiveness.

Three types of failure rates have been of interest to researchers—theoretical, extended use-failure and use-failure rates. The theoretical rate is the rate prevailing if a method is used perfectly; its major problem, however, is that it *is* theoretical and cannot be derived from survey data. It also bears little relationship to failure rates of methods as they are actually used. The extended use-failure rate, in contrast, takes into account method failure, user failure and user loyalty; in this measure, women are assumed to be at risk of contraceptive failure during an entire pregnancy interval (except for periods of nonexposure), and unintended pregnancies are attributed to the failure of the first method used in that interval, regardless of whether that method was abandoned prior to conception. This measure, then, does not permit the identification of the risk of contraceptive failure during use. The use-failure rate, on the other hand, is a direct measure of this risk, and includes both user-related and method-related reasons for failure. This type of rate, which has been the focus of many previous studies,[2] can be determined from survey data, so the risk of unintended pregnancy during contraceptive use can be calculated for particular methods as they are actually employed.

When examining the failure rates reported here, we should keep two considerations in mind. First is that to the extent that women

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William R. Grady and Mark D. Hayward are research scientists and Junichi Yagi was a research specialist with the Battelle Human Affairs Research Centers, Seattle. This article is based on a study that was supported by the Office of Population Affairs, DHHS, under contract no. 282–83-0076. The opinions expressed herein are those of the authors and do not necessarily represent those of the Office of Population Affairs or the Battelle Memorial Institute. The authors wish to thank Jane Menken and an anonymous reviewer for their helpful comments, and David Sommers and Francesca Florey for their computational assistance.

who choose a particular contraceptive method are different from those who choose another, comparisons of failure rates by method will reflect a certain amount of self-selection. The effects of some differences between users of various methods (and between users and nonusers) can be controlled for by using multivariate statistical techniques. Other differences, in particular those involving fecundity and frequency of intercourse, cannot be controlled for, and may affect the comparisons insofar as they influence the choice of a method. A second, although probably less important, consideration concerns the possibility that the adoption of a specific type of method may produce behavioral changes affecting exposure to the risk of pregnancy that are reflected in the failure rates, such as when the use of no method leads to a reduction in coital frequency, or when pill use leads to an increase in coital frequency.

Since 1973, research has provided increasingly more detailed information on the risks of unplanned pregnancy associated with different contraceptive methods and with various social, economic and demographic characteristics of married women in the United States practicing contraception.[3] The Schirm study estimated use-failure rates using a hazards-model analysis.[4] This approach is a multivariate technique that allows the estimation of independent effects on the risk (or hazard) of contraceptive use-failure for each variable included in the model. Using this approach, rates can be calculated for any combination of characteristics in the model, and failure rates that are standardized for the other variables can also be calculated for each category of any variable. The analysis used here is a direct extension of this earlier work, employing the same methodology but based on Cycle III of the NSFG (NSFG-III), which was conducted in 1982. It is also the first analysis to measure the risk of unintended pregnancy among married women during periods in which they use no method.

No previous research has examined contraceptive failure among a sample representative of all single women in the United States. Although some research on single adolescent women has been undertaken, it is severely limited in scope, having been restricted to never-married women 18–19 years of age.[5] In addition, because of problems with the availability of data, these analyses, which are limited to examination of rates of unintended pregnancy by duration since either first intercourse or first method use, do not provide true life-table probabilities (i.e., risks of unintended pregnancy), since one cannot determine whether the respondents actually engaged in coitus subsequent to the first month of observation. Thus, since the at-risk population cannot be adequately identified, unintended pregnancy rates among single women only approximate extended use-failure rates and cannot be directly compared with rates for married women, among whom nonexposure to intercourse has been controlled for. Comparability by marital status is also limited by the fact that the studies involving single women aged 18–19 restricted their analyses to the first pregnancy interval (from first coitus to either first marriage or first pregnancy).

Despite their problems of comparability and representativeness, these early studies of contraceptive effectiveness among never-married women do find substantial differences in the risk of contraceptive failure by type of method first used, and they show large reductions in the risk of unintended pregnancy when use of the pill or IUD is compared with use of no method. Unfortunately, the life-table methodology that was used was not a multivariate technique, and control variables could not be introduced into the analyses. However, separate life table analyses for blacks and whites and for different ages at first intercourse showed that these characteristics were associated with significant differences in the risk of unintended pregnancy.

This article addresses the problems encountered in earlier studies of single women. First, the study described here is representative of the experiences of all single women, not of a selected subsample. Second, it produces use-failure rates based on life-table analysis, since information from the NSFG-III permits the risk of unintended pregnancy to be ascertained for each month of exposure. Finally, the multivariate hazards-model life table that is used permits, for the first time, examination of the independent effects both of type of method and of individual characteristics on the risk of unintended pregnancy among single women.

Researchers have asserted that data on contraceptive use among teenagers contain a "large element of error because of the respondent's inability or unwillingness to recall past use accurately."[6] However, this conclusion is based on conflicts between the respondents' claims that they used a method continuously and their admissions that they sometimes "skipped" using it. In the present analysis, however, "continuous use" is considered simply as reliance over a specified duration, whether or not use was sometimes skipped. In general, the quality of data for single women was comparable to that of married women in the NSFG-III: There was no significantly greater level of missing or inconsistent data among single women's responses, and the number of periods without intercourse that were reported by never-married women was comparable to the number reported by married women, although never-married women tended to report longer periods of no intercourse.

One problem not addressed in previous research on contraceptive failure is the underreporting of abortion. When failure rates are based on survey data, any tendency for survey respondents not to report unintended pregnancies that ended in abortion negatively biases failure rates. The accuracy of abortion reporting among NSFG-III respondents has been estimated to vary with a woman's race and marital status.[7] White married women reported nearly all of their pregnancies that ended in abortion, whereas black married women reported only an estimated 39 percent. Overall, married women reported an estimated 82 percent of their abortions, compared with 44 percent among single women. Reporting is estimated to be about 52 percent complete among single white women, while among single blacks it is believed to be only 34 percent complete.

It is difficult to estimate the effect of this underreporting on estimated failure rates, but it is clear that the use-failure rates reported for single women are too low here, as well as in previous research. The effect of underreporting is probably very small among married women but considerable among single women. The magnitude of abortion underreporting among single women has two implications for the results given here. First, the true level of risk of unintended pregnancy among single women is not accurately reflected in the estimated failure rates; thus, use-failure rates in this article for married and single women have been adjusted for the underreporting of abortion. However, these estimates presume that there are no method-related differences in the completeness of abortion reporting (an assumption required because of the lack of information about the magnitude of any such differences). Second, comparisons across subgroups of single women and between single and married women are affected by group differences in the completeness of abortion reporting. Any such comparisons, then, must be made with caution.

Methodology

Cycle III of the NSFG used a sample representative of all women aged 15–44 living in households or group quarters in the coterminous United States. It was the first survey to include detailed information on contraceptive use and sexual activity for a representative sample of never-married women. The survey employed a multistage area probability sample. Personal interviews averaging an

Table 1. Variables tested for inclusion in the hazards model

Variable	Category
Method	Pill/IUD/condom/diaphragm/spermicides/rhythm/other/none
Consistency of use	Never skipped/sometimes skipped/always skipped
Intention	Prevent/delay
Duration of exposure (in months)	1–2/3–4/5–6/7–8/9–10/11–12
Race	Black/other
Religion	Catholic/other/none
Annual family income (as % of poverty level)	<100%/100%–199%/200%–299%/≥300%
Parity at beginning of exposure interval	0/1–3/≥4
Age at beginning of exposure interval	<18/18–19/20–24/25–29/30–44
Marital status	Single/currently married

hour in length were completed with 7,969 women between July 1982 and February 1983. Black women and adolescents aged 15–19 were oversampled. Missing data codes for all variables included in the analysis and for variables used to construct a file of intervals of exposure were imputed.*

Exposure intervals, which form the foundation for this analysis, are based on very detailed information about each interval of continuous use of a contraceptive method, or each period of nonuse, during which the woman was exposed to the risk of pregnancy (i.e., she was having intercourse, not sterile and not trying to become pregnant). To be eligible for inclusion, the exposure interval must have occurred, at least in part, during the observation period—January 1, 1979, to July 1, 1982. Since each interval represents a period of continuous use or nonuse, women who switch methods or who switch between use and nonuse can contribute more than one interval to the study. Intervals that are interrupted by periods of no intercourse are considered continuous, but these periods contribute no exposure to the interval during that time.

The selection of the sample of exposure intervals follows the procedures originally established in an analysis of Cycle-I NSFG data[8] and modified for use with the Cycle-II analysis.[9] Specific selection criteria are described in the appendix, as are methods both for determining the amount of exposure and for coding termination status for each interval. The final analysis is based on information for 5,269 women (66 percent of the respondents),† who contributed a total of 10,692 intervals of continuous exposure. For 1,687 intervals, the first month of observation started 12 or more months after the beginning of exposure, so these were deleted from the study. Thus, the analysis described here is based on a total of 8,922 exposure intervals—5,385 contributed by single women and 3,537 contributed by married women.

Each of the exposure intervals contains information about a number of user characteristics listed in Table 1. With the exception of duration of exposure and marital status, all characteristics refer to the user's status at the beginning of the interval. Marital status is a time-dependent covariate, so women who changed marital status during a segment of exposure are removed from one marital-status model and entered into the other during the ordinal month of exposure in which the transition occurred. Marriage is considered to begin with entry into formal marriage and end upon separation or widowhood. Thus, the models for married women represent the experiences of women who are currently married with spouse present; never-married and formerly married women are classified as single.

The log-linear hazards modeling technique used in this analysis permits the examination of the simultaneous effects of a large number of variables on the risk of contraceptive failure.‡ The model-fitting procedure used here is described on page 209 of the appendix. The model for married women controls for contraceptive method, duration of exposure, contraceptive intention (whether to delay or prevent a birth), age, parity and income. Duration of exposure is included in the model in order to establish the baseline hazard function needed to calculate life-table failure rates and is not of explicit substantive interest. In this study, however, interactions of duration by type of method were found to be significant.§ Race, religion and consistency of use (whether the woman ever skipped using the method) did not significantly affect the fit of the model, and were deleted from the analysis. The nonsignificant effects of race and religion were anticipated, given previous findings.[10] However, the lack of significance for the consistency variable was surprising, since it is clear that skipping use of a contraceptive method should raise the risk of conception.

The lack of effect for the measure of consistency of use is probably due to poor measurement. Skipping may occur more frequently during periods in which a woman is at low risk of conception, indicating perhaps a periodic reliance on rhythm. Questions in the NSFG did not probe for this. The questionnaire also does not ask *when* skipping occurred during the segment of method use; thus, at least some proportion of married women who skipped using a method may have done so after the first 12 months of observed use, which are all that are included in this analysis. Finally, the skipping variable was classified into ambiguous categories of frequency (e.g., "sometimes" and "often") that have skewed distributions and may have greatly different meanings to users of different methods. Thus, we chose to collapse this variable into a dichotomy, which may obscure its true effects. An understanding of the actual effects of skipping the use of a method on the risk of contraceptive failure most likely must wait until a better measure of consistency of use is developed.

The model for single women controls for contraceptive method, duration of exposure, contraceptive intention, age, parity, income and race. Age and parity have nonproportional effects—their effects differ by duration of exposure. Consistent with the results for married women, religion and consistency of use did not contribute significantly to the fit of the statistical model and were deleted from the analysis. However, unlike the model for married women, the model for single women included race as a variable having a significant effect on the risk of unintended pregnancy.

In this analysis, standardized use-failure

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*Some variables were imputed by the National Center for Health Statistics (NCHS), while others were imputed as part of this study. To accomplish this, the NCHS used imputation from a sorted file, while the authors of this article used a hot-deck procedure. For descriptions of both of these procedures, see: B. Vaughan et al., 1980 (reference 2).

†The 2,700 women who were deleted experienced no exposure to the risk of unintended pregnancy during the entire observation period. Eighteen were premenarcheal at the close of observation, 1,259 were virgins at that time and 1,159 were sterile (for either contraceptive or noncontraceptive reasons) at the beginning of observation. Another 264 women were excluded because during the entire observation period, they either did not have intercourse (including time spent prior to first intercourse), were trying to become pregnant, were pregnant, were in the postpartum period or were sterile.

‡Parameter estimates and standard errors for all variables in the life table are available from the authors.

§Schirm and his colleagues found that the effects of the characteristics of users on failure rates (or hazard rates) were the same (or proportional) at all durations. In the research described here, since the effects of some characteristics were found to differ at various durations of method use (i.e., nonproportional effects were found), the calculation of failure rates is based on both proportional and nonproportional effects. A nonparametric contingency-table approach was used to estimate the hazards-model life table; thus, all covariates and durations are treated categorically. (For a more complete description of the hazards-model life table and the contingency-table method of estimation, see reference 1.)

Table 2. Percentage of currently married women who have an unplanned pregnancy within the first year of contraceptive use, by method, January 1, 1979–July 1, 1982

Method	Unstandardized	Standardized*	Adjusted†
Pill	3.7	2.9	2.9
IUD	7.1	5.9	6.0
Condom	10.6	13.8	14.1
Rhythm	8.6	16.1	16.1
Diaphragm	14.9	17.0	17.2
Spermicides	20.2	21.8	22.1
Other	22.9	21.7	21.9
No method	43.1	40.0	41.2

*Standardized for age, contraceptive intention, parity and income.

†Standardized for age, contraceptive intention, parity and income, and adjusted for underreporting of abortion.

rates are used to illustrate the effects of each characteristic.[*] Separate calculations were made for married and for single women, so that the standardized estimates shown for each marital-status group represent the experiences of all women of that marital status who were exposed to the risk of unintended pregnancy during the observation period. However, since the rates shown for each marital-status group were standardized separately, comparisons remain influenced by differences by marital status in women's characteristics.

Failure Rates Among Married Women

Table 2 shows unstandardized and standardized use-failure rates, by method, as well as use-failure rates that have been adjusted for the underreporting of abortion.[†] It is noteworthy that among married women, adjusting for abortion underreporting has a very small impact on failure rates. Standardized rates indicate that the pill and the IUD are the most effective contraceptive methods (with failure rates of three and six percent, respectively), followed by the condom (14 percent), rhythm (16 percent) and the diaphragm (17 percent).

Overall, the rates presented in Table 2 are slightly higher than those calculated by similar means in earlier research.[11] The increase is probably due mainly to the shift toward sterilization observed in recent years among married women who have completed their childbearing.[12] This trend has resulted in a younger age structure and a higher proportion of delayers among the nonsterile, currently married women who are under study.

Another difference between these results and those of previous research is the relatively low failure rate associated with use of the rhythm method, a rate substantially lower than that found in the analysis of 1973 and 1976 NSFG data (24 percent).[13] It is possible that the educational efforts of natural family planning advocates have created a trend toward better use of this method. For example, the data indicate that rhythm users in the NSFG-III were more likely to report that they relied on the temperature method (as opposed to the calendar method) than were rhythm users in the NSFG-II (16 percent and 10 percent, respectively); however, both of these proportions are low, and the vast majority of rhythm users still report that they rely on the calendar method. Although these results offer an interesting departure from earlier findings, they must be interpreted with extreme caution. Only 6.3 percent of person-months of exposure were contributed by rhythm users. Thus, the use-failure rate found for this method is subject to a substantial amount of sampling error.

This study is the first to produce an estimate of the risk of unintended pregnancy during the first year associated with the use of no method. At first glance, the 40 percent risk found in Table 2 may seem low; it is certainly far below the biological maximum for this population. It should be remembered, however, that the women involved in this analysis are those who did not want to get pregnant. Thus, it is likely that their use of no method is associated with evidence of subfecundity or with a low level of coital frequency. Women may choose to use no method because they have intercourse infrequently, or they may restrict coital frequency because of the high risk of conception associated with unprotected intercourse. These women may also tend to engage in intercourse only during the relatively safe periods of their cycles and may therefore be practicing a form of periodic abstinence, or rhythm. Nevertheless, the failure rate reported here represents the actual experience of the population of currently married women who experience unprotected intercourse.

When the unstandardized rates are examined, we find that they are similar to the standardized rates. The largest percentage differences are found for the pill, IUD, condom and rhythm: The unstandardized rates for pill and IUD users (four percent and seven percent, respectively) are more than 20 percent higher than the standardized rates. These differences result from the fact that users of both of these methods tend to be younger and have lower incomes, characteristics that are associated with a high risk of unintended pregnancy. In addition, pill users are likely to be delaying a wanted pregnancy. In contrast, standardization increases the failure rate for the condom and rhythm (from 11 to 14 percent and from nine to 16 percent, respectively), because the users of these methods are older and have higher incomes, characteristics associated with low risks of unintended pregnancy.

Failure rates standardized according to a woman's contraceptive intention and age are found in Table 3 (see page 204). The effects of these two factors are shown together because of the statistical interaction between intention and age. Overall, women who are trying to prevent an unwanted pregnancy have lower failure rates than those who are attempting to delay a wanted pregnancy. However, this difference is greatest among women younger than 20 and smallest among 20–29-year-olds. The results shown here are similar to those found in earlier research.[14] However, the Schirm study found that young preventers had the highest failure rates of any age and intention group, while here such women appear to have the second lowest failure rates. The reason for this change is unclear, but it may be partly the result of different age-categorizations in the two studies. The youngest age-group in the earlier study included all women under age 22, while the current study restricts the youngest age-group to women under age 20.

The reason for the relationship between a woman's age and her contraceptive intention may be found in the costs of having another child. Among delayers, who do want a child at some time, these costs are unrelated to age. However, for preventers, an unwanted child would have an increasingly greater impact as they become older and enter later stages of the family life-cycle. Anticipation of this impact may increase their motivation to avoid an unintended pregnancy. Women younger than 20 who seek to prevent another birth are an unusual group in that they com-

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[*] Standardization is accomplished by calculating one-year method-failure rates for each combination of characteristics included in the model, calculating the proportion of exposure that is observed within each cell defined by these characteristics, for all method users combined, and then taking the weighted average of the failure rates within each method category, using the proportions found in the previous step as the weights. Since the same marginal distributions (for all methods) are used to obtain the weighted average for each type of method, the resulting standardized use-failure rates are those that would occur in the absence of method differences in the characteristics of users. The resulting rates are similar to adjusted rates that are obtained in the more familiar types of multiple classification analysis.

[†] The adjustment for underreporting of abortions by NSFG-III respondents used the following formula:

$$\hat{f}_r = f_r \times [1 - p_a + (p_a/p_r)],$$

where $\hat{f}_r$ is the adjusted failure rate, f_r is the estimated failure rate, p_a is the proportion of respondents who reported that a pregnancy resulting from a contraceptive failure ended in an induced abortion and p_r is the proportion of actual abortions reported by NSFG-III respondents (as estimated in reference 7).

Table 3. Percentage of currently married women who have an unplanned pregnancy within the first year of contraceptive use, by contraceptive intention and age, by parity and by income, according to method

Variable	Pill	IUD	Rhythm	Condom	Diaphragm	Spermicides	Other	No method
INTENTION AND AGE*								
Delay								
<20	4.7	9.5	85.6	21.7	26.5	33.4	33.2	57.4
20–24	3.7	7.7	10.1	17.7	21.8	27.8	27.6	49.5
25–29	2.8	5.7	11.7	13.4	16.6	21.4	21.2	39.7
30–44	2.8	5.9	15.4	13.8	17.1	21.9	21.8	40.6
Prevent								
<20	1.6	(3.3)	(48.9)	7.9	9.9	(12.9)	(12.8)	25.2
20–24	3.3	6.9	9.1	16.0	19.8	25.2	25.1	45.7
25–29	2.4	4.9	10.1	11.7	14.5	18.7	18.6	35.4
30–44	1.2	2.6	7.0	6.3	7.9	10.3	10.2	20.4
PARITY†								
0	2.6	5.4	15.2	12.7	15.8	20.2	20.1	37.4
1–3	2.9	5.9	16.2	13.9	17.2	22.0	21.8	40.2
≥4	4.1	8.3	20.5	19.1	23.4	29.5	29.3	51.1
INCOME‡								
<100%	4.1	8.5	21.0	19.5	23.9	30.2	30.0	52.4
100%–299%	3.1	6.3	17.1	14.8	18.3	23.4	23.3	42.7
≥300%	2.3	4.8	14.0	11.4	14.2	18.3	18.2	34.5

*Standardized by parity and income. †Standardized by contraceptive intention, age and income.

‡As a percentage of the federally designated poverty level; standardized by contraceptive intention, age and parity.

Note: Parentheses signify that there are no intervals in cell (see Appendix, p. 209).

pleted their childbearing very early, and thus face a very long period of time during which they are at risk of having an unwanted child. This prospect may provide the additional motivation to avoid contraceptive failure that is reflected in their low failure rates.

Table 3 shows that the risk of unintended pregnancy increases with parity. This relationship is unexpected, in that it was not evident in previous research on married women.[15] However, the association may result from two factors: High parity may be an indicator of previous contraceptive failure, so that high-parity women would tend to be less effective contraceptive users; an alternative explanation could be a difference in the marginal costs of having an unwanted child. For example, women with no children would find their lives substantially changed if they were to have a child, and thus may have an added motivation to avoid an unintended pregnancy; in contrast, the birth of another child might have a less dramatic impact for a woman with four children, since the family has already had to accommodate the needs of a number of children.

Income (measured as a percentage of the poverty level) is negatively related to the risk of unintended pregnancy. This may be because higher income women have greater access to information about contraception and reproduction; it may also be that such women feel they have greater control over all aspects of their lives, including reproduction, and are less fatalistic about childbearing than are low-income women. Finally, the opportunity costs associated with having an unwanted child are probably greater for higher income women.

Failure Rates Among Single Women

Standardized contraceptive failure rates for single women are found in Table 4. The pattern of these rates is similar to that seen among married women. For example, just as with married women, single women using the pill and IUD have the lowest failure rates (4–5 percent), use of the condom is associated with intermediate failure rates (eight percent) and a high failure rate is found among users of spermicides (16 percent). In contrast to what was seen among married women, the unmarried who rely on rhythm and the diaphragm experience relatively high failure rates, approximately the same as the rate associated with spermicide use. Another divergence from the pattern observed among married women is the relatively low failure rate for "other" methods (primarily douche, withdrawal and abstinence). The reason for this difference is unknown, since married and single women are about as likely to rely on each of these methods; however, single women using "other" methods are slightly more likely than married women to have relied on abstinence (eight percent compared with five percent). Among single women who use no method, the risk of pregnancy during the first year of exposure is 33 percent.

In general, there are smaller differences between the unstandardized and standardized rates for single women than there were for married women. The largest differences are found for the IUD, rhythm and "other" methods. The reason that users of the IUD and rhythm have substantially lower failure rates after standardization is that users of these methods tend to be of high parity and to have a low income, characteristics that are associated with a high risk of failure. Single women who use rhythm are also younger than other users. Those who rely on "other" methods, in contrast, tend to be of lower parity and to have a higher income.

Overall, the failure rates estimated for single women are lower than comparable rates found for married women; only the failure rate for the pill is higher. However, as was noted above, these rates are underestimates because of the substantial underreporting of abortions among single respondents to the NSFG-III. Table 4 shows that when failure rates have been adjusted for abortion underreporting, they average about 44 percent higher than the unadjusted rates, and are much closer to the rates of married women. Indeed, the adjusted rates for use of the pill, rhythm, the diaphragm and no method are higher than comparable rates for married women. The higher rates for rhythm and the diaphragm may be due to their coitus-intrusive nature, which is perhaps less compatible with single women's life-styles. The higher rates for use of the pill and no method are less easily understood. It may be that single women are more prone to skip the pill when they are not regularly exposed to intercourse, and thus they use it less effectively; single women who use no method may simply be greater

Continued on page 207

Table 4. Percentage of single women who have an unplanned pregnancy within the first year of contraceptive use, by method

Method	Unstandardized	Standardized*	Adjusted†
Pill	5.3	4.6	5.7
IUD	7.6	4.4	5.4
Condom	8.2	8.0	10.8
Rhythm	20.6	15.8	23.0
Diaphragm	13.3	14.4	23.3
Spermicides	17.1	15.6	19.4
Other	7.5	9.2	15.4
No method	33.9	33.4	44.7

*Standardized for age, contraceptive intention, race, parity and income.

†Standardized for age, contraceptive intention, race, parity and income, and adjusted for underreporting of abortion.

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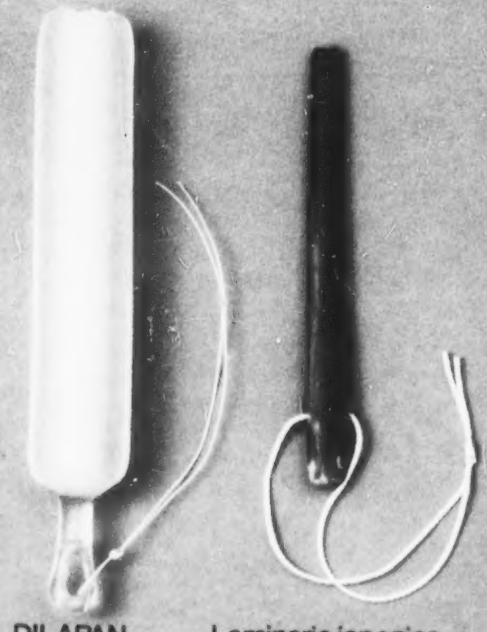

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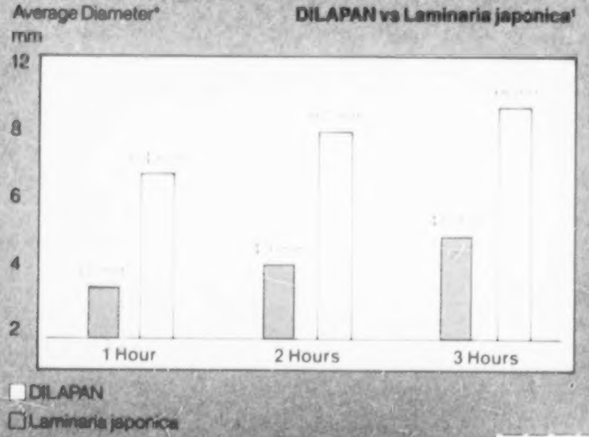

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References:
1. Chvapil M, Droegemueller W, Meyer T, et al. New Synthetic laminaria. *Obstet & Gyn* 60: 729–733, 1982
2. Data on file. Gynotech Incorporated, Lebanon, NJ.

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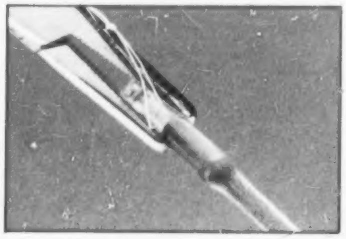

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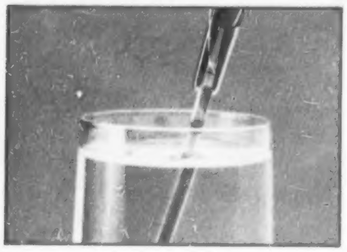

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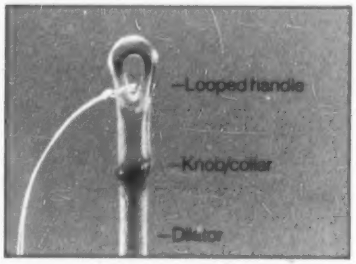

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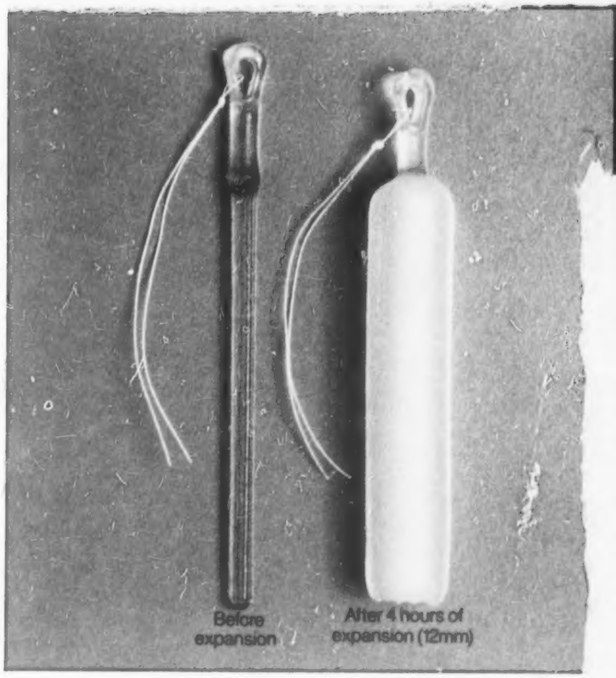

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(Continued from page 204)

Table 5. Percentage of single women who have an unplanned pregnancy within the first year of contraceptive use, by contraceptive intention and age, by race, by parity and by income, according to method

Variable	Pill	IUD	Rhythm	Condom	Diaphragm	Spermicides	Other	No method
INTENTION AND AGE*								
Delay								
<18	4.5	4.4	15.9	7.8	14.2	15.5	9.1	33.5
18–19	3.1	4.9	17.5	8.7	15.7	17.1	10.1	36.5
20–24	4.5	4.3	15.7	7.7	14.0	15.2	9.0	33.0
25–29	3.4	3.2	12.0	5.8	10.7	11.7	6.8	26.0
30–44	3.9	3.8	13.9	6.8	12.4	13.5	7.9	29.8
Prevent								
<18	11.0	10.5	33.9	18.4	31.6	34.0	21.1	62.9
18–19	9.6	9.3	30.6	16.3	(28.3)	30.5	18.7	58.2
20–24	7.2	6.9	23.9	12.3	21.7	23.5	14.2	47.6
25–29	5.0	4.8	17.4	8.6	15.6	17.0	10.0	36.3
30–44	1.9	1.8	7.0	3.3	6.2	6.8	3.9	15.7
RACE†								
Black	4.5	4.3	2.3	7.7	13.9	15.1	8.9	32.5
Other	4.7	4.5	20.6	8.1	14.5	15.8	9.3	33.7
PARITY‡								
0	3.9	3.8	14.1	6.8	12.3	13.4	7.9	29.5
≥1	6.6	6.3	22.4	11.2	20.0	21.6	13.0	44.3
INCOME§								
<100%	5.4	5.2	18.6	9.3	16.7	18.2	10.8	38.2
100%–299%	4.7	4.5	16.2	8.0	14.5	15.7	9.3	33.8
≥300%	3.9	3.7	13.7	6.7	12.2	13.2	7.8	29.0

*Standardized by race, parity and income. †Standardized by contraceptive intention, age, parity and income.

‡Standardized by contraceptive intention, age, race and income.

§As a percentage of the federally designated poverty-level income; standardized by contraceptive intention, age, race and parity.

Note: Parentheses indicate that there are no intervals in cell (see Appendix, p. 209).

risk-takers than comparable married women, or may be more fecund. However, while the adjustment for abortion underreporting takes into account method-related differences in the likelihood of terminating a contraceptive failure in an abortion, it assumes no such differences in the likelihood of reporting those abortions. These adjusted rates, then, must be interpreted with caution. In addition, single women are younger, have lower incomes and parities and are more likely to be delaying a birth than are married women. These differences are also reflected in the failure rates reported here, and will affect comparisons related to marital status.

As was seen for married women, the joint effect of the contraceptive intention and age of single women influences failure rates. In Table 5, we can see that the effect of contraceptive intention among single women is very different from that found among married women. Overall, single women who are delaying a wanted birth have *lower* failure rates than do those who are preventing an unwanted birth. This result is counterintuitive and cannot readily be explained. It may be that in retrospect, women redefine the childbearing intentions they had at the time of conception; for example, single women may experience so many negative consequences from an unintended pregnancy that they define that pregnancy as never wanted, regardless of their feelings at the time of conception. Since adverse consequences (e.g., disruption of schooling and conflict with parents) are likely to decline with age, this tendency toward redefinition may also account for the diminishing difference up to age 29, when the relationship between contraceptive intention and age reverses.

Another possible explanation is that young single women trying to prevent a pregnancy do so because they have already had one or more unwanted pregnancies. Thus, prevention (as opposed to delay) at a young age may be an indicator of previous contraceptive failure; this group, then, may include a high proportion of ineffective users and high-risk nonusers. The older age-groups, in contrast, may include many formerly married women who successfully regulated their fertility until they attained their desired family size.

The results in Table 5 show that black women and women of all other races have comparable risks of unintended pregnancy, except that among users of the rhythm method, blacks have substantially lower risks of unintended pregnancy than do other women. The reason for this lower risk is unknown, but it should be noted that this relationship is based on the experience of very few women. When considering the race-related differences shown in Table 5, however, we should remember that single black women are substantially less likely than single women of other races to report pregnancies ending in abortion,[16] a difference that would tend to produce a greater understatement of black use-failure rates.

The results for income and parity among single women are consistent with the findings for married women. Not only are the relationships between these variables and the risk of unintended pregnancy in the same direction as those for married women, they are also of similar magnitude. These factors, then, probably operate in the same manner for both marital-status groups.

Conclusions

In general, the patterns of use-effectiveness of contraceptive methods are similar for both married and single women. Single women have lower failure rates than married women do, but much of this difference is due to the fact that single women are less likely than married women to report that they had an abortion. When differences by marital status in the reporting of abortion are taken into consideration, the failure rates of the two groups of women are much closer.

Comparisons show that the pill and IUD are the most effective methods for both single and married women. It is also clear from these comparisons that among both groups, the condom has an intermediate failure rate and spermicides have a high rate. For the remaining methods (the diaphragm and rhythm), the two groups diverge: Among married women, use of these methods is associated with intermediate failure rates similar to that found for the condom; among single women, their use is associated with high failure rates more like that of spermicides. Users of no method have the highest failure rates among both groups of women.

The results of this study show marked similarities not only among single and married women, but also among adolescents and older women. Although adolescents are at generally higher risk of unintended pregnancy than are older women, only one variable in either model was found to have different effects for the two age-groups—contraceptive intention among single women. However, the factors responsible for the overall age difference in the risks of unintended pregnancy have not been identified.

This study points to the need for further research into the effects of two factors that have an impact on the failure rates. First, the effects of underreporting of abortion on contraceptive failure rates that are derived from survey data must be estimated in more detail. Differences in the likelihood that an abortion is reported, depending on type of method used and on the characteristics of the user, must be determined before an accurate adjustment of failure rates can be achieved. Only when the impact of this underreporting is effectively controlled can levels of risk of unintended pregnancy be accurately estimated for subgroups of women, particularly for single women. Second, the effects of coital frequency on differences in levels of unintended pregnancy must be understood. The results of the NSFG-III do contain some information on frequency of intercourse for a limited period before the survey date. Future analyses of such data should provide ways to incorporate that information into the statistical models employed here. The information derived from such an analysis would allow researchers to partially disaggregate the components of use-failure rates, and would provide additional insights into group differences in the effectiveness of contraceptive practice.

Appendix

- *Sample selection.* During the first stage of the selection process, individual respondents were examined and excluded from the study if they had never been exposed to the risk of pregnancy during the entire observation period (i.e., if first menses had not occurred by the end of observation [July 1982], if first intercourse after first menses had not occurred by the end of observation or if they had become noncontraceptively sterile prior to the start of observation). Among the remaining eligible women, pregnancy intervals were excluded from the study if no exposure could have occurred within the observation period (i.e., if the pregnancy interval ended prior to the start of observation, if the pregnancy ending the interval overlapped the start of observation or if the pregnancy interval began after the end of observation).

Finally, each of the remaining eligible pregnancy intervals was examined for intervals of contraceptive use and nonuse. Intervals were ineligible for inclusion in the study if no exposure could have occurred within the observation period (i.e., if the interval ended prior to the start of observation or began after the end of observation), or if unintended pregnancy was not possible during the interval (i.e., if the woman was trying to get pregnant or if, during the entire interval, she was not having intercourse).

Before a life table can be constructed, the way in which each interval of exposure was terminated must be identified from the data. Each exposure interval included in the study was coded as terminating in one of three major ways—unintended pregnancy (the focus of this study), cessation of use for "other reasons" (i.e., changed methods, stopped method use to try to get pregnant or was noncontraceptively sterilized), and close of observation (used for more than 12 months or continued use at the end of the observation period). Stopping for "other reasons" was a competing risk that was statistically removed from the analysis. Thus, the use-failure rates produced in this study are "gross rates."[17]

Unintended pregnancy is defined by the occurrence of either of two events. The first is a contraceptive failure, which is considered to have taken place when the month in which method use stopped came after the month in which a pregnancy began, or when the month in which use stopped was the same month in which the pregnancy began but the respondent reported that she had not stopped use at the time of conception. The second is unintended pregnancy during nonuse of a contraceptive method. This event is considered to have occurred either when no method was used during the month in which a pregnancy began and the respondent reported she was not trying to become pregnant, or when the end of method use and the beginning of a pregnancy occurred during the same month and the respondent reported she had stopped method use before the conception occurred, but not because she wanted to get pregnant. The latter circumstance is classified as an unintended pregnancy during the first month of an interval of nonuse.

- *Contribution of exposure.* Before intervals can be entered into a life table, the amount of exposure contributed during the interval at each duration-month included in the life table must also be ascertained. This is accomplished using three pieces of information—the first and last months of observed exposure during the interval and the way in which the interval was terminated. The first observed duration-month is month one for all intervals beginning within the observation period. For intervals overlapping the beginning of observation, however, the first observed duration-month is the month of *exposure* during which observation began (where months of exposure is equal to total months

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minus months of no intercourse). For example, a woman whose sixth continuous month of contraceptive use overlapped the beginning of observation (January 1, 1979) would be coded as having a first observed duration-month of six. It should be noted that exposure is considered to begin no sooner than the beginning of the second month after a pregnancy termination; this delay in exposure is to allow for postpartum amenorrhea. The last duration-month of observed exposure is equal to the total length of the interval of exposure (in months), less the number of months of no exposure as well as the number of months occurring after the end of observation. Since one-year unintended pregnancy rates are calculated in this study, any duration greater than 12 ordinal months is set equal to 12.

In calculating the amount of exposure contributed by respondents during each calendar month of observation, the following rules apply. During the first calendar month of observed use, respondents contribute only one-half month of exposure, on the assumption that they were first observed, on average, halfway through that month. The exception to this rule is when the first month of observation is not the first month of use (i.e., use overlaps the beginning of observation). In this case, a full month of exposure is contributed, because observation begins on January 1, 1979. During the last calendar month of observed use, respondents contribute only one-half month of exposure, on the assumption that they were last observed, on average, halfway through that month. An exception to this rule is when use overlaps the end of the observation period, in which case observation ends on the last day of the final month of the observation period, and a full month of exposure is contributed. During all other calendar months, a full month of exposure is contributed. The exceptions to this rule are cases in which the calendar month is the first month of a period of no intercourse (when a half month of exposure is contributed, on the assumption that the period of no intercourse began, on average, halfway through the month), and in which the calendar month is the last month of a period of no intercourse (when a half month of exposure is contributed, on the assumption that the period of no intercourse ended, on average, halfway through the month). It is important to remember that the rates reported here are 12-month rates. Thus, only the first 12 months of exposure are considered. Cases in which observed durations of exposure are greater than 12 months are censored at 12 months and coded as continuing users at that duration.

- *The Model-Fitting Procedure.* A baseline hazards model that contained all main effect terms and all two-term interactions was established. (Only two-term interactions were considered, because higher order interactions are difficult to interpret and are of little substantive value.) Second, all sets of interactions that did not significantly contribute to the model's fit (at the 0.05 level) were deleted. Third, all variables that were not significant were deleted. Finally, adjacent categories of variables were collapsed if they did not significantly alter the model's fit. Because of numerous significant interactions involving marital status, separate models for single and married women were constructed and the above procedure was applied to each.
- *Cell size.* Since the failure rates reported in this article are the results of a regression, each individual rate shown in a table is not dependent on the number of intervals included in the cell. Some cells not only contain no intervals, but would not be expected to contain any. For example, we would not anticipate finding very many married women under age 20 who are trying to prevent any additional births. Although failure rates are shown in Tables 3 and 5 even for categories of women with such rare characteristics, these rates are of limited substantive value. Thus, the failure rates calculated for the entirely empty cells have been placed in parentheses in these tables.

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Adolescent Pregnancy in the United States: An Interstate Analysis

By Susheela Singh

Summary
Rates of teenage pregnancy, birth and abortion vary greatly among states. Because states that have high birthrates tend to have low abortion rates, pregnancy levels vary much less than do the birth and abortion measures. The role of unintended pregnancy is highlighted by the fact that in states that have very high pregnancy rates, the adolescent abortion rate is higher than the birthrate and the abortion rate *combined* in states that have the lowest pregnancy rates.

A series of multivariate analyses that controlled for the percentage of the state population that was black, poor and metropolitan showed that social factors tend to be more important determinants of state differences in teenage pregnancy, birth and abortion levels than are policy-related variables, particularly for whites. Nevertheless, some policy measures have important associations for both races, especially for blacks.

- *Social factors.* High rates of population growth and residential mobility over the previous decade, a high crime rate, a high teenage suicide rate, extensive circulation of sexually explicit magazines, a large percentage not voting in elections and a high level of stress are all associated with high pregnancy-related rates for teenagers. The percentage of children living in female-headed households correlates positively with abortion and pregnancy levels among white teenagers, but has no significant association with the birthrate.

The percentage of a state's population that belongs to fundamentalist religious groups is positively associated with adolescent birthrates. Political liberalism correlates with relatively low pregnancy rates and birthrates but with a somewhat higher likelihood of pregnancies being terminated by abortion. In states where women's status is higher, birthrates are lower, but abortion levels are higher.

- *Policy measures.* States that have high proportions of teenagers dropping out of school and of young women not graduating from high school tend to have high pregnancy rates and birthrates and a somewhat lower proportion of pregnancies ending in abortion. Increased spending on education is associated with relatively high abortion rates (and, therefore, pregnancy rates). The higher the teacher-student ratio, the lower the adolescent birthrate and the more likely the pregnant teenager is to have an abortion.

Welfare payments to teenage mothers are negatively associated with both black and white teenage birthrates, and higher maximum payments are associated with relatively high abortion levels. Thus, such welfare payments do not appear to be an incentive for childbearing among black or white adolescents.

Only one measure of sex education—the proportion of senior high school students receiving sex education—proved significant: the higher the proportion, the lower the pregnancy rate among white teenagers.

The availability of Medicaid funds for abortion is associated with relatively high abortion levels and (for blacks) significantly lower birthrates. The accessibility of large abortion providers in a state is associated with relatively high abortion rates.

The lack of state data on contraceptive use and sexual activity makes it difficult to measure the effect of contraceptive availability on teenage pregnancy–related measures. A greater availability of physicians in a state is associated with a lower teenage birthrate but with higher teenage abortion levels; there is very little effect on the pregnancy rate.

When preexisting birthrates and abortion availability are controlled for, substantially lower birthrates are seen for both white and black teenagers in states with high proportions served by family planning clinics. However, no significant difference is seen for pregnancy rates. It is notable that the greater the increase in the percentage of women served by family planning clinics over the previous decade, the greater the decline in the birthrate among both white and black adolescents. Data are not available to examine if there is a similar association with the pregnancy rate.

Introduction

The levels of teenage births and abortions are much higher in the United States than in other developed countries because of the very high rate of unintended pregnancies among U.S. teenagers.[1] A recent study has identified some factors at the national level that help to explain these observed pregnancy differentials among countries that have similar levels of adolescent sexual activity. Among them are the distribution of income, societal openness about sex and accessibility of contraceptive services.[2] But are these factors as important within the United States as between countries in explaining variation in levels of adolescent pregnancy?

Three earlier studies looked at interstate differences in the teenage birthrate during the early 1970s.[3] Two of these analyses found that between 1970 and 1974, several factors had especially strong associations with high adolescent birthrates.[4] These were high percentages of the population that are black, poor and fundamentalist. The number of teenagers served by organized clinics divided by the sum of teenage births and abortions also showed a strong positive association with the decline in the teenage birthrate that oc-

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curred during this period. The study on which the present article is based focuses on teenage reproduction in a more recent period—1980. In addition, unlike earlier state and substate analyses that could consider only birthrates,[5] this study also directly examined factors associated with pregnancy rates and abortion rates.

> **"Demographic, social and economic characteristics (which can include educational attainment) are more important than policy measures in explaining the differences between states in the rates of teenage pregnancy, birth and abortion. . . ."**

Although the use of states as the unit of analysis has definite advantages, since many important policies are decided at the state rather than the county or local level, this approach also has some methodological drawbacks.[*][6] The danger of incorrect or overstated interpretations (whereby associations based on measures for geographic areas are interpreted in terms of the behavior of individuals)—the so-called ecological fallacy[7]—is dealt with by keeping interpretations at the level of states.

The Variables and the Analysis

The relationships between teenage pregnancy and demographic, social and economic attributes of states, as well as a number of policy-related factors, are examined in this analysis. Many factors that are important and measurable were considered, but only a selection representing the different types of factors is shown.

Most variables were measured as of 1980 or the late 1970s in order to relate them to reproductive behavior during 1980. All dollar variables were standardized using an estimated state consumer price index.[8] Although the survey from which the sex education measures were obtained was fielded in 1982, we use these variables on the assumption that relative differences would not have changed greatly from the late 1970s to 1982. It is unfortunate that no adequate measure of sexual openness at the state level could be obtained, in view of the finding of the international study that this was a significant explanatory factor.[9]

The unavailability of state data on contraceptive use and sexual activity is an extremely important limitation, particularly for such policy-related variables as family planning and abortion services, which may be considered as societal responses to high rates of pregnancy and birth. Contraceptive use and sexual activity are the two main proximate determinants of pregnancy, intervening between fundamental socioeconomic and policy-related factors and pregnancy. No data exist on state-level differences in the proportion of teenagers who obtain contraceptives from private physicians or from drugstores. Thus, although we look at the percentage of teenagers served by family planning clinics, this factor is in no way equivalent to the overall percentage of teenagers using contraceptives. Nor is the percentage married a substitute for the percentage sexually active; it represents only a small proportion of those sexually active and probably does not have the same relative variation across states as overall sexual activity does. Because data needed to examine the relationship between use of family planning services and pregnancy rates independent of sexual activity levels are not available, additional analyses were carried out to help understand the relationship.

It has been our aim to analyze black and white teenage rates separately. However, only those independent factors designated by a dagger in Tables 2 and 3 (pages 214–215) can be measured by race. Virtually all of the policy measures and some of the measures of social integration are based on statewide characteristics and cannot be distinguished at the state level for blacks and whites. One potential difficulty is that since these measures are heavily weighted by characteristics of the majority white segment of the state's population, they may not be very relevant for understanding the behavior of black teenagers. Other data-related issues are discussed in Appendix 1 (page 219).

Pregnancy and childbearing rates are not treated separately among married and unmarried adolescents.[†] Multiple regression analyses that controlled for the percentages black, poor and living in metropolitan areas in each state were used to evaluate the relative importance of factors associated with teenage pregnancy and childbearing. The methodology is described in detail in Appendix 2 on page 220. We focus on standardized beta coefficients in interpreting the results of the multivariate analysis. Because these coefficients are standardized, they may be used to compare the relative effect of different variables.[‡] All beta coefficients of 0.15 or greater are shown because strict application of the significance rule would suppress quite sizable coefficients; the analysis, however, is generally confined to results significant at the 0.05 level or better.[§] In any case, since these are not population samples, the results of significance testing should be regarded only as a rough guide.

Variations Between States

As may be seen in Table 1 (page 212), in 1980 there were 111 pregnancies per 1,000 15–19-year-olds in the United States. States with high or low teenage pregnancy rates may exhibit different combinations of birth and abortion levels. Thus, Mississippi, with a very high teenage pregnancy rate, has the highest teenage birthrate, but one of the lowest abortion rates of all the states. California, on the other hand, with an even higher pregnancy rate than Mississippi's, has only a mod-

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[*] The small number of cases is one problem, a further disadvantage is that any measure that is averaged across a state will blur variation across smaller areas within states. A third issue, the confounding of factors studied with the socioeconomic and racial composition of the states, is approached in this article by controlling for the percentage of the population that is black, poor and living in metropolitan areas, and by carrying out some analyses separately for whites and blacks.

[†] Abortion data for unmarried teenagers are unavailable for most states and, therefore, pregnancy rates could not be calculated. In addition, the fact that a substantial proportion of marriages among teenagers are the result of premarital conceptions reduces the advantage of analyzing marital and nonmarital fertility separately. Because of the relatively low proportion of births to black teenagers who are married as compared with the proportion among whites (14 percent versus 65 percent), racial comparisons would be less meaningful if marital and nonmarital rates were analyzed separately.

[‡] The metric or unstandardized betas were compared with the standardized betas, and the same interpretations and conclusions were supported by both sets of results. Use of standardized coefficients to compare different samples is generally not advisable, because both the means and the standard deviations change from sample to sample. However, in this analysis, although the comparisons involve subsets of states (22, 34, 32 and all 50 in different instances), we feel that the standardized beta coefficients are preferable. The issue of subsamples is not a major one, because the population is so small; in only a few cases is there a large difference in standard deviations between the black and white subsamples. Factors with noticeably different standard deviations between blacks and whites are: pregnancy and abortion rates—a larger deviation among blacks, the percentage poor and the percentage unemployed—a larger deviation among blacks; the percentage married—a smaller deviation among blacks; and the percentage served by clinics—a smaller deviation among the states that have large black populations. In addition, by standardizing for the size of the deviation, we are using a conservative measure of the difference between subgroups—unstandardized betas would appear larger when factors have larger variances; use of the standardized betas as a measure of strength of relationships reduces the tendency to make causal interpretations, which is unavoidable when unstandardized or metric coefficients are used. The metric betas and the standard deviations of variables are available on request.

[§] That is, with at least a 95 percent probability that the findings are not the result of chance.

Table 1. Rates of pregnancy, birth and abortion among women aged 15–19, ranked in descending order, by state, 1980

State	Pregnancy†						Birth						Abortion					
	Total		White		Black		Total		White		Black		Total		White		Black	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
Number of states	50		32		22		50		50		34		50		32		22	
U.S. total	**111.2**	**na**	**u**	**na**	**u**	**na**	**53.3**	**na**	**u**	**na**	**u**	**na**	**42.9**	**na**	**u**	**na**	**u**	**na**
Ala.‡	117.3	16	u	na	u	na	68.3	10	52.5	15	102.9	18	32.2	31	u	na	u	na
Alaska‡	124.2	9	u	na	u	na	64.4	15	48.2	23	u	na	42.7	15	u	na	u	na
Ariz.	123.2	10	114.7	4	194.5	8	65.5	12	59.6	9	124.3	7	40.6	17	39.3	12	41.2	14
Ark.	117.2	17	103.6	9	167.6	16	74.5	5	62.9	8	118.2	10	25.3	40	25.5	26	23.4	21
Calif.	140.2	2	126.8	2	271.9	1	53.3	25	51.0	18	89.1	28	69.3	1	59.6	2	150.0	1
Colo.	113.7	18	104.9	8	192.0	10	49.9	31	47.6	24	90.8	25	48.9	8	43.4	6	75.5	6
Conn.‡	80.7	45	u	na	u	na	30.5	49	24.4	49	89.6	27	40.1	19	u	na	u	na
Del.	105.6	25	u	na	u	na	51.2	28	36.9	38	110.4	14	40.1	19	u	na	u	na
Fla.‡	131.2	4	u	na	u	na	58.5	18	42.5	30	125.7	5	55.4	5	u	na	u	na
Ga.	130.9	5	111.0	6	171.6	15	71.9	8	53.7	14	109.9	15	40.5	18	42.3	8	36.1	16
Hawaii	105.6	25	81.2	26	u	na	50.7	30	30.6	45	u	na	40.7	16	40.4	11	u	na
Idaho	96.4	34	95.5	14	u	na	59.5	17	58.9	10	u	na	22.7	44	22.6	28	u	na
Ill.	100.6	33	77.5	28	190.0	12	55.8	24	41.4	32	122.0	8	30.6	34	25.3	27	39.6	15
Ind.	101.9	29	92.1	20	192.7	9	57.5	21	52.2	16	111.7	13	29.9	35	26.8	23	53.3	10
Iowa‡	79.0	48	u	na	u	na	43.0	39	41.3	33	u	na	25.0	41	u	na	u	na
Kan.	101.0	31	92.9	19	198.6	7	56.8	23	51.2	17	125.4	6	29.8	36	28.6	21	43.8	12
Ky.‡	110.7	21	u	na	u	na	72.3	7	69.3	2	107.3	17	21.8	47	u	na	u	na
La.	118.1	15	93.1	18	162.6	17	76.0	3	57.8	11	109.7	16	24.4	42	21.6	30	28.1	19
Maine	86.9	40	85.9	24	u	na	47.4	34	46.8	25	u	na	27.3	38	27.0	22	u	na
Md.	122.5	11	102.7	10	174.4	14	43.4	38	31.4	44	75.9	32	64.0	3	59.1	3	75.7	5
Mass.	85.7	42	u	na	u	na	28.1	50	25.7	48	73.9	34	47.3	10	u	na	u	na
Mich.	102.4	28	u	na	u	na	45.0	37	37.2	37	92.0	23	44.0	12	u	na	u	na
Minn.	77.0	49	72.8	31	240.1	2	35.4	44	32.7	43	126.3	3	31.4	33	30.5	18	80.5	4
Miss.	125.0	8	96.7	13	162.4	18	83.7	1	56.2	12	120.3	9	22.3	46	26.6	24	16.4	22
Mo.	106.4	24	91.9	22	204.6	6	57.8	20	49.6	20	114.9	11	33.6	28	29.4	20	60.7	9
Mont.	93.3	38	85.1	25	u	na	48.5	32	42.0	31	u	na	31.9	32	31.6	17	u	na
Nebr.	80.7	45	u	na	u	na	45.1	36	41.2	34	u	na	24.2	43	u	na	u	na
Nev.	144.0	1	133.8	1	225.8	3	58.5	18	50.3	19	128.0	1	67.1	2	66.8	1	65.6	7
N.H.‡	80.7	45	u	na	u	na	33.6	47	33.4	42	u	na	36.7	24	u	na	u	na
N.J.	95.8	35	73.6	30	209.8	4	35.2	45	23.4	50	97.0	21	48.7	9	41.3	10	84.9	3
N. M.	125.6	7	118.0	3	u	na	71.8	9	66.3	5	u	na	35.8	25	34.9	14	u	na
N.Y.	100.7	32	77.6	27	207.2	5	34.8	46	26.2	47	74.2	33	53.6	6	42.0	9	107.4	2
N.C.	110.3	22	92.1	20	152.5	20	57.5	21	44.8	27	87.7	29	37.5	23	34.8	15	42.9	13
N. Dak.	74.8	50	67.9	32	u	na	41.7	40	36.2	39	u	na	22.5	45	22.2	29	u	na
Ohio	101.3	30	88.0	23	190.3	11	52.5	27	46.1	26	100.2	20	34.8	26	29.7	19	63.7	8
Okla.	119.5	13	106.6	7	186.5	13	74.6	4	64.4	7	126.3	3	27.3	38	26.6	24	31.7	18
Oreg.	118.7	14	112.4	5	u	na	50.9	29	49.0	21	u	na	52.4	7	48.7	4	u	na
Pa.	90.3	39	u	na	u	na	40.5	41	34.5	41	90.7	26	37.9	22	u	na	u	na
R.I.	83.1	44	u	na	u	na	33.0	48	29.8	46	u	na	39.6	21	u	na	u	na
S.C.	113.7	18	98.0	12	139.8	22	64.8	14	48.7	22	91.9	24	32.7	30	35.9	13	26.9	20
S. Dak.	86.4	41	74.0	29	u	na	52.6	26	43.2	29	u	na	21.2	48	20.2	31	u	na
Tenn.	113.0	20	101.7	11	156.9	19	64.1	16	55.0	13	100.4	19	32.8	29	32.5	16	33.1	17
Tex.‡	137.0	3	u	na	u	na	74.3	6	68.3	3	112.0	12	43.5	13	u	na	u	na
Utah	94.6	37	93.5	17	u	na	65.2	13	64.9	6	u	na	14.9	50	14.2	32	u	na
Vt.	94.8	36	94.4	15	u	na	39.5	42	39.5	35	u	na	43.1	14	42.7	7	u	na
Va.	107.4	23	93.7	16	151.5	21	48.3	33	38.2	36	82.2	30	44.9	11	43.5	5	48.0	11
Wash.	122.3	12	u	na	u	na	46.7	35	43.9	28	96.9	22	60.3	4	u	na	u	na
W. Va.‡	103.6	27	u	na	u	na	67.8	11	67.4	4	80.0	31	20.2	49	u	na	u	na
Wisc.‡	84.8	43	u	na	u	na	39.5	42	34.6	40	127.8	2	34.0	27	u	na	u	na
Wyo.	126.6	6	u	na	u	na	78.7	2	76.7	1	u	na	29.2	37	u	na	u	na

†In order to take into account miscarriages and stillbirths, pregnancy rates are estimated as follows: (1.2 × birthrate) + (1.1 × abortion rate).

‡Abortion data estimated, based on the proportion of all abortions obtained by teenagers in similar states.

Notes: u = data unavailable or, in the case of blacks, that the black population was under 50,000; these states are omitted from the ranking. Na = not applicable.

erate birthrate, but the highest abortion rate of any state. Connecticut and South Dakota both have very low teenage pregnancy rates; but the former state has an extremely low birthrate and a somewhat higher-than-average abortion rate, while the latter has an average birthrate and a very low abortion rate. Only a small minority of states have high birthrates *and* high abortion rates, or low birthrates *and* low abortion rates. The former, as may be seen in Table 1, are Alaska, Arizona, Florida, Georgia, Nevada and Texas. The latter are Iowa, Maine, Minnesota, Montana, Nebraska and North Dakota.

The existing range for birthrates across states is large: it goes from 28 births per 1,000 teenagers in Massachusetts to 84 per 1,000 in Mississippi. The range in abortion rates is even greater—going from 15 per 1,000 15–19-year-olds in Utah to 69 per 1,000 in California. The range in pregnancy rates is proportionally much narrower—from 75 per 1,000 in North Dakota to 144 per 1,000 in Nevada. Thus, whereas pregnancy rates are about two times as great in the state with the highest as in the one with the lowest levels, abortion rates are nearly five times as high and birthrates are three times as high. States that exhibit high teenage birthrates among whites tend to have high black rates also ($r=0.39$).*

It is notable that in the two states with the highest teenage pregnancy rates, California and Nevada, the adolescent abortion rates are higher than the birthrates and abortion rates *combined* in the two states that have the lowest pregnancy rates, North Dakota and Minnesota. Thus, the extremes in pregnancy rates appear to be determined mainly by a greater prevalence of *unintended* conceptions in states with high pregnancy rates. This finding is similar to the result of the study comparing the pregnancy experience of U.S. teenagers with that of teenagers from other developed countries: The adolescent abortion rate in the United States is as high as or higher than the birthrates and abortion rates combined in Canada, England and Wales, France, the Netherlands and Sweden.[10]

The abortion ratio, the percentage of pregnancies terminated by induced abortion, indicates both the propensity of women to terminate a pregnancy and the availability of abortion services in the various states. The ratio is discussed separately here only when the pattern differs from that for the abortion rate. The ratio among teenagers in the United States is 39 per 100 pregnancies, and varies from a low of 16 in Utah to a high of 55 in Massachusetts. California, Connecticut, Maryland, Nevada, New Hampshire, New Jersey, New York, Rhode Island and Washington also have relatively high abortion ratios (over 45 per 100).

The four pregnancy-related measures are strongly associated with each other. Where the pregnancy rate is high, the birthrate is high for whites ($r=0.60$), but only marginally so for blacks ($r=0.18$), for whom very high pregnancy levels are accompanied by much higher abortion rates in the northern and western states; in addition, a high pregnancy rate usually coincides with a high abortion rate for both whites and blacks ($r=0.57$ and 0.80, respectively). As may be expected, the abortion rate and ratio are highly and positively correlated ($r=0.83$). A higher abortion rate is generally accompanied by a lower birthrate ($r=-0.34$), especially among blacks ($r=-0.45$). This result is the opposite of that found in the comparative study of developed countries, where the abortion rate was positively correlated with the birthrate; that is, countries with low birthrates also tend to have low abortion rates and low pregnancy rates.[11] This contrast implies that the processes that produce differences in teenage pregnancy-related behavior among the states are probably not the same as those that produce differences among developed countries.

The Control Variables

The first numbered panel of Table 2 (page 214) shows the effect of each of the three basic control factors when the other two are held constant: When the percentages who are poor and who live in metropolitan areas are controlled for, the percentage black is relatively unimportant as a determinant of teenage reproduction in the total population; the birthrates of white teenagers are significantly higher where the percentage who are black is higher, probably because of the correlation that exists between residence in southern states and a higher percentage who are black in each state.

States that have a higher percentage of poor people have higher pregnancy rates and birthrates, after the percentage black and the percentage who live in metropolitan areas are controlled for. The percentage poor has weaker relationships with black teenage pregnancy rates and birthrates as compared with its relationship with the rates for all races and for the white population. The proportion living in metropolitan areas is positively related to the pregnancy rate (significantly so for white teenagers) and to the abortion rate (significantly for all teenagers and for whites).

The percentage of the variance in the pregnancy-related behavior variables that is explained by the three control variables fluctuates greatly. This percentage is generally larger for the total population, ranging between 26 and 54 percent, than for the white population (21–39 percent), or among blacks (13–58 percent).

Demographic, Social & Political Factors

In regressions including the three control variables, states in which the teenage birthrate was high in 1970 have higher rates of teenage pregnancy and births in 1980, and these coefficients are usually highly significant (second panel of Table 2). The level of adult fertility in 1980 is highly and positively associated with the teenage birthrate in 1980. Higher adult fertility is not significantly associated with higher teenage pregnancy rates, but is significantly associated with lower abortion rates and ratios among all teenagers and among those who are white. In states in which a higher percentage of teenagers are married, white teenagers (and all teenagers) have higher birthrates and pregnancy rates and lower abortion ratios. Among blacks, only birthrates are significantly higher in those states.

Selected indicators of social integration and its absence, and of alienation and social dysfunction are included in the regression analyses (panel 3). These factors are not expected to be determinants of teenage pregnancy-related behavior in their own right, but they are proxies for the social climate that influences the behavior of teenagers. Data are not available to investigate the extent to which the influence of those variables operates at the state level through differences in sexual activity or contraceptive use.

Results show that the higher the rate of population growth between 1970 and 1980, and the higher the rate of residential mobility, the higher the pregnancy rates and birthrates. State population growth and mobility may be indicators of poorer community integration and less parental control over adolescents, as well as of insufficient knowledge of the social and health services available (including family planning). Population growth and mobility, which are associated with higher mean incomes, are accompanied by higher abortion rates among all teenagers and among white adolescents. Neither factor has any significant relationship with the proportion of pregnant teenagers who terminate those pregnancies by abortion. The state crime rate, the teenage suicide rate, the level of sales of sexually explicit magazines, the

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*The range for whites is from 23 in New Jersey to 77 in Wyoming. For blacks, it is from 74 in Massachusetts to 128 in Nevada. There is little relationship between white and black abortion and pregnancy rates. The range in abortion rates for whites is from 14 in Utah to 67 in Nevada; for blacks, it is from 16 in Mississippi to 150 in California.

Table 2. Among women aged 15–19, standardized beta coefficients for rates of pregnancy, birth and abortion, and the abortion ratio, by selected demographic, social and political variables, after controlling for the percentage of teenagers who are black, poor and who live in metropolitan areas

Explanatory variable	Pregnancy rate			Birthrate			Abortion rate			Abortion ratio		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
No. of states	50‡	32	22	50‡	50‡	34	50‡	32	22	50‡	32	22
1. Control variables												
% black (controlling poor, metro)	–	0.30	-0.45	–	0.24*	-0.37	–	–	–	–	–	0.35
% poor (controlling black, metro)	0.45*	0.64*	0.30	0.53**	0.51**	0.53	–	–	–	-0.36*	-0.30	-0.37
% metro (controlling black, poor)	0.30	0.57*	0.60	-0.18	-0.20	–	0.60**	0.55*	0.68	0.49**	0.34	0.64
% of variance explained by 3 control variables	26	21	55	49	39	13	41	27	50	54	31	58
2. Demographic & 3 controls												
Teenage birthrate, 1970†	1.00**	0.85**	–	0.83**	0.74**	0.79**	0.28	0.20	-0.42*	-0.31*	-0.32	-0.49**
Adult fertility, 1980†	–	–	0.33	0.34**	0.37**	0.60**	-0.28*	-0.49**	–	-0.42**	-0.61**	-0.28
% married, 1980†	0.66**	0.59*	–	0.83**	1.05**	0.52**	-0.17	-0.36	–	-0.60**	-0.82**	-0.22
3. Social characteristics & 3 controls												
% pop. growth, 1970–1980	0.66**	0.67**	–	0.44**	0.43**	0.43**	0.31**	0.32	–	–	–	–
% pop. moved county or state, 1975–1980†	0.68**	0.42*	–	0.35**	0.20	0.26	0.46**	0.38*	0.18	–	0.18	0.20
Crime rate, 1975	0.81**	1.09**	0.17	0.38**	0.28	0.38	0.58**	0.77**	0.18	–	0.22	–
Teenage suicide rate, 1978	0.64**	0.61**	–	0.32**	0.24	0.50**	0.43**	0.52**	–	–	0.20	–
Sales of sexually explicit magazines, 1980	0.69**	0.71**	0.20	0.34*	0.20	0.70**	0.48**	0.67**	–	–	0.31	-0.21
Index of stress, c. 1975–1980	0.73**	0.80**	–	0.35**	0.30*	0.21	0.52**	0.58**	–	–	0.17	–
% children in female-headed hhs, 1980†	–	0.55**	0.48	-0.29	-0.22	–	0.25	0.77**	0.16	0.37**	0.60**	–
% not voting in 1980	0.66**	0.61*	–	0.38**	0.34*	–	0.39**	0.68**	0.15	–	0.46*	0.19
4. Liberalism & 3 controls												
% fundamentalist, 1980	0.22	-0.32	-0.47	0.43**	0.46*	0.51*	-0.24	-0.23	-0.48	-0.37*	-0.45	-0.42
Liberalism score in House of Reps., 1979–1981	-0.41**	-0.36*	0.36	-0.53*	-0.55**	-0.74**	–	0.22	0.56*	0.39**	0.49**	0.56*
Index of women's status, 1975–1980	–	–	0.15	-0.33*	-0.43**	-0.22	0.46**	0.47**	0.36	0.51**	0.64**	0.41*

*p<0.05. **p<0.01. †Variables measured race-specifically. Note: In this and subsequent tables, dashes indicate coefficients smaller than 0.15.

‡Washington, D.C., is excluded from analysis because it is 100 percent urban and its inclusion would bias the results.

Sources: **Percent black**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. B 2–52, U.S. Government Printing Office (GPO), Washington, D.C., 1983, Table 14; **Percent poor, 1980**—The Alan Guttmacher Institute (AGI), unpublished tabulations of 1980 census data; **Percent metro, 1980**—AGI, unpublished tabulations of 1980 census data; **Teenage birthrate, 1970**—see reference 25; **Adult fertility, 1980**—see reference 25; **Percent married, 1980**—AGI, unpublished tabulations of 1980 census data; **Population growth, 1970–1980**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. B 2–52, GPO, Washington, D.C., 1983, Table 19; **Population moved, 1970–1980**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. B 2–52, GPO, Washington, D.C., 1983, Table 21; **Crime rate, 1975; Teenage suicide rate, 1978; Sales of sex magazines, 1980; Index of stress, 1975–1980; Index of women's status**—all involve special tabulations from M. A. Strauss, *State and Regional Indicators Archive*, University of New Hampshire, Durham, 1985; **Percent of children in female-headed households**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. B 2–52, GPO, Washington, D.C., 1983, Table 21; **Percent not voting, 1980**—U.S. Bureau of the Census, *Statistical Abstract of the United States: 1982–83*, GPO, Washington, D.C., 1982, Table 803, p. 491; **Percent fundamentalists, 1980**—Glenmary Research Center, unpublished data from 1980 survey of churches, Atlanta, 1982; **Liberalism score, 1979–1981**—M. Barone and G. Ujifusa, eds., *Almanac of American Politics*, Barone and Co., Washington, D.C., 1982.

index of stress* and the percentage not voting show relationships for all teenagers similar to those of population growth and mobility: Where they are high, rates of pregnancy, birth and abortion are high.

Among white teenagers, the proportion of children who live in female-headed households is positively and significantly correlated with the pregnancy rate and the abortion rate and ratio, but has no significant association with the birthrate. (For all adolescents, only the abortion-ratio relationship is significant; for blacks, none is significant.) Of all the indicators of social integration, the proportion of children in female-headed households has the strongest association with the probability that pregnant white teenagers will have abortions. Unemployment rates among male and female teenagers were included in the regression equation, but were found to have no significant relationship with teenage pregnancy, birth or abortion rates at the state level, and are not shown.

In general, these results support the hypothesis that states with lower social integration, and with greater social and economic problems, provide environments in which more teenagers are likely to become pregnant, to have abortions and to experience early motherhood.

As shown in panel 4, a higher percentage of fundamentalists in a state is associated with high birthrates for both black and white teenagers and with low abortion ratios.† Greater political liberalism in a state (as measured by the voting behavior of the state's delegation in Congress) is correlated with lower birthrates for both black and white teenagers. This factor is associated with relatively high abortion ratios (and, for blacks, with significantly high abortion rates), and with low pregnancy rates (significantly so for all teenagers and for whites, but there is no significant relationship for blacks). Higher economic, legal, educational and political status of women has much the same relationship with the birthrate and with abortion levels as does greater political liberalism; that is, higher status is associated with lower birthrates and with higher abortion rates and ratios. (For black teenagers, the results are significant only for the abortion ratio.)

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*A higher value in the index of stress indicates more severe occurrence of social and economic problems based on economic factors (e.g., business failures, unemployment claims), family stress factors (divorce, abortion, fetal death), and other events (disaster assistance, new housing units, new welfare recipients, percentage of high school dropouts, percentage moved). The data were obtained from M. A. Strauss (see footnotes to Table 2).

†The association is significant for all teenagers, but not for blacks or whites separately, probably because of the smaller number of states examined.

Policy-Related Factors

- *Education.* Educational effort is measured in this study by the amount of public funds spent per student and by the number of teachers per student (panel 1, Table 3). States in which public expenditures for education are high tend to have relatively high teenage pregnancy and abortion rates and (for whites), high abortion ratios. A high teacher-student ratio also is correlated with a high teenage abortion ratio, and is significantly and strongly associated with low teenage birthrates. These results suggest that motivation to avoid childbearing is greater in states where the quality of education is better. There is, in fact, greater availability of abortion services in states that provide better education. The correlation between the percentage of a state's population living in counties that have at least one facility providing 400 or more abortions annually and the dollars spent on education is 0.29 ($p \leq 0.05$). The number of teachers per student may more accurately reflect what resources are actually available to children than do expenditures and may, therefore, be a better measure of educational quality.

Low educational attainment is measured by the percentage of male and female 16–19-year-olds who had dropped out of high school as of 1980 and the percentage of 20–24-year-old women who had not graduated from high school. The drop-out rate is strongly and positively related to the teacher-student ratio ($r=0.43$). Pregnant adolescents who have a baby are more likely to drop out of school, and those who drop out are more likely to become pregnant and to have a child. Even after controlling for the percentage black, poor and metropolitan, we find that states in which there is a relatively high drop-out rate have significantly higher teenage pregnancy rates (all teenagers and whites only) and birthrates (among both whites and blacks) than do states with low drop-out rates. There are no significant relationships with the abortion rate, but in states where drop-out rates are high, abortion ratios are significantly lower for the total teenage group. The percentage of 20–24-year-old women not graduating

Table 3. Among women aged 15–19, standardized beta coefficients for rates of pregnancy, birth and abortion, and the abortion ratio, by selected policy-related variables, after controlling for the percentage of teenagers who are black, poor and who live in metropolitan areas

Explanatory variable	Pregnancy rate			Birthrate			Abortion rate			Abortion ratio		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
1. Education & 3 controls												
$ spent per student, 1980	0.37**	0.18	–	–	–	–	0.35**	0.36	0.16	0.20	0.36*	0.19
Teacher-student ratio, 1979–1980	-0.27	-0.18	–	-0.33**	-0.38**	–	–	0.22	-0.19	0.30**	0.42*	–
% 16–19-yr.-olds dropped out, 1980†	0.69**	0.89**	–	0.61**	0.73**	0.54**	0.15	0.21	-0.31	-0.25*	-0.35	-0.28
% women aged 20–24 not graduating, 1980†	0.78**	0.84**	–	0.74**	0.77**	0.51*	–	–	-0.24	-0.31*	-0.44*	-0.17
2. AFDC & 3 controls												
Max. payment to 2 persons, 1980	–	–	0.63**	-0.42**	-0.43*	-0.30	0.45**	0.48*	0.79**	0.53**	0.52*	0.69**
% of pop. on AFDC, 1977	-0.21	-0.29	0.58*	-0.20	-0.27*	-0.34	–	–	0.43	–	0.16	0.22**
Index of AFDC coverage, 1980‡	-0.36*	-0.29	0.26	-0.38**	-0.37**	-0.45*	–	–	0.32	0.19	0.24	0.27
3. Sex education & 3 controls												
% received sex ed. in sr. high, 1982	–	-0.98**	0.36	–	–	–	–	-0.54	0.18	–	–	–
4. Abortion & 3 controls												
Availability of Medicaid funds, 1980–1981	0.23	–	0.30	–	–	-0.55**	0.34**	0.42*	0.53**	0.22*	0.55**	0.53**
Index of nonrestrictive abortion policies	0.22	0.29	0.32	–	–	–	0.27*	0.33	0.41*	–	0.17	0.33
% in counties with large providers, 1980	0.55**	0.38	0.40*	–	–	–	0.57**	0.66*	0.45*	0.27	0.57*	0.33
Adult abortion rate, 1980	0.58**	0.27	0.47*	–	-0.21	-0.43	0.88**	0.86**	0.79**	0.65**	0.89**	0.74**
5. Index of availability of doctors, c. 1975–1980 (& 3 controls)	-0.16	-0.19	0.32	-0.44**	-0.44**	-0.63**	0.34*	0.41*	0.57*	0.52**	0.66**	0.59**

*$p \leq 0.05$. **$p \leq 0.01$. †Variables measured race-specifically.

‡Based on the number of basic items covered, the number of special items and whether the unborn child and the unemployed parent are covered.

Sources: **Education dollars spent/student**—W. V. Grant and L. J. Eiden, *Digest of Educational Statistics, 1981*, National Center for Education Statistics, Washington, D.C., 1981, Tables 69 and 70, pp. 80–81; **Teacher-student ratio, 1979–1980**—same book as preceding, Table 45, p. 54; **16–19 drop-out rate, 1980**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. C 2–52, GPO, Washington, D.C., 1983, Tables 66 and 76; **Percent women 20–24 not graduating, 1980**—U.S. Bureau of the Census, *1980 Census of Population*, Vol. D 2–52, GPO, Washington, D.C., 1983, Table 203; **AFDC maximum, 1980**—"AFDC Standards for Basic Needs," Social Security Administration, Dept. of Health and Human Services (DHHS), Washington, D.C., Mar. 1981, Table 5; **Percent AFDC, 1977**—M. A. Strauss, see footnotes to Table 2; **Index of AFDC, 1980**—"Characteristics of State Plans for Aid to Families with Dependent Children," Social Security Administration, DHHS, Washington, D.C., 1980; **Percent receiving sex education, 1982**—F. L. Sonenstein, unpublished data, see reference 14; **Medicaid expenditures for abortion, 1980 and 1981**—R. Gold, "Publicly Funded Abortions in FY 1980 and FY 1981, *Family Planning Perspectives*, **14**:204, 1982, Table 2; **Abortion restrictions as of 1 Jan. 1979**—AGI, *Abortion: Needs, Services and Policies*, New York, 1979, Table A; **Percent in counties with large abortion providers, 1980**—unpublished data from the AGI 1981 survey of abortion providers; **Adult abortion rate, 1980**—see references 26 and 27; **Index of MD availability**—M. A. Strauss, see footnotes to Table 2; and unpublished tabulations from an AGI 1982 survey of physicians in private practice.

from high school has similar relationships with pregnancy-related behavior. These relationships are plausible, since we would expect lower educational attainment to be associated with less effective practice of contraception to avoid pregnancy and with a lower probability of ending a pregnancy by abortion among those teenagers who do become pregnant.

- *Aid to Families with Dependent Children.* Three indicators of the extent of AFDC coverage and the level of payments were used here to explore whether these benefits might provide an incentive to teenagers to have a child.

As may be seen in panel 2 of Table 3, all three measures of the quality of the AFDC program are *negatively* associated with the teenage birthrate, for both white and black teenagers (although only the index is significantly correlated for each race considered separately). Higher maximum AFDC payments to two persons with no other income (the likely financial position of a teenager having her first child) are significantly associated with higher abortion rates and ratios for all groups. In absolute terms, states in which the maximum monthly AFDC payment for two persons is $100 higher than in other states show birthrates about nine points lower and abortion rates about eight points higher than the comparable rates found in the other states. Higher AFDC payments and a larger proportion receiving benefits are associated with higher pregnancy rates among black teenagers, but this relationship is accompanied by high teenage abortion rates and ratios among blacks. Birthrates of teenage blacks in states with more comprehensive AFDC programs are lower than those in states with less comprehensive programs. These data show that more generous state AFDC coverage is not acting generally as an incentive for teenage childbearing.

It is notable that there is a significant and positive relationship between the percentage of women receiving AFDC payments in a state and the availability there of Medicaid funds for abortion.

- *Sex education in schools.* Sex education varies a good deal within states. The content of sex education classes and even whether the subject is taught at all are generally decided by individual school districts rather than by the state government. Even where a general state policy exists, local school districts interpret and apply it in different ways.*[12] Nevertheless, many proponents of sex education in the schools argue that sex education should lead to lower teenage pregnancy rates and birthrates because it increases the practice of effective contraception,[13] whereas opponents hold that sex education leads to increased sexual activity and, therefore, to higher pregnancy rates.[14] We considered five measures of state policy on teaching the subject in the schools and on the extent of instruction. These were the percentage who received sex education in junior high school, the percentage who had such instruction in senior high school and the number of class periods of sex education, all in 1982;[15] whether parental consent was required in 1978; and whether in 1978 the state had a liberal policy with regard to sex education.[16] Only one measure showed any significant association: A higher proportion of senior high school students receiving sex education is strongly and significantly associated with a low pregnancy rate among white teenagers (panel 3 of Table 3). In absolute terms, a state in which 10 percent more teenagers receive sex education has a teenage pregnancy rate for whites that is five points lower than that in other states (not shown). Data are not available to address the question of the extent to which this relationship occurs through state differences in sexual activity or contraceptive use. The other four measures in the regression had no significant associations and are not shown in the table.

- *Availability of abortion services.* The state climate surrounding abortion is measured by two variables: whether Medicaid funding for abortions was available in 1980–1981 and an index summarizing restrictions on abortion.† Lack of Medicaid funding may constitute a concrete limitation in itself and may also indicate a restrictive official stance on abortion, or it may reflect general attitudes about paying for any services for the poor. The abortion index is meant to indicate the official climate in the state relative to abortion. Access to abortion is approximated by two factors: the percentage of the state's population who in 1980 lived in counties with facilities providing 400 or more abortions annually, and the 1980 abortion rate for adult women in the state. Caution must be taken in interpreting the results of this analysis, since accessibility of services may be an indicator of the extent of unintended pregnancies that already existed and, therefore, of the demand for abortion services as well as the supply of such services.

After including the three control variables, the availability of Medicaid funds for abortion was found to have a significant association with lower birthrates among black adolescents (panel 4 of Table 3). This finding is probably related to the fact that black teenagers are more likely than whites to be eligible for Medicaid. (In 1984, 25 percent of black women aged 15–44 had medical coverage through Medicaid, as compared with five percent of white women.[17]) The availability of Medicaid funding is associated with a higher abortion rate and ratio for both racial groups. This result may reflect either a real influence of access to Medicaid funding among low-income teenagers (more likely for black than for white teenagers), or an association between the state climate concerning abortion and availability of abortion services in general (more likely for white than for black teenagers). The index of nonrestrictive policies on abortion is also positively and significantly associated with the abortion rate for all teenagers and for blacks. Where a higher percentage of the population live in counties with providers of 400 or more abortions annually, which would tend to be in larger urban areas, abortion rates and (for white teenagers) ratios are significantly higher. The adult abortion rate has a similar pattern of relationships. Once again, the reader is reminded that these relationships may reflect both access to services and past demand for services because of a preexisting high level of unintended pregnancy.

- *Availability of physicians.* An index of the accessibility to teenagers of contraceptive services provided through private physicians was constructed. The index was based on the availability of private obstetrician-gynecologists and general and family practitioners in a state and their reported willingness to provide contraceptives to teenagers without parental consent.‡

As may be seen in panel 5 of Table 3, where the index of availability of doctors is

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*The measures of sex education in schools are based on data from urban school districts, requiring acceptance of the by-no-means certain assumption that the situation in urban school districts can be generalized to that in the state as a whole. In addition, data were available for only 34 states. It is also possible that sex education courses are intended as a response to already high teenage pregnancy rates, thus blurring any negative relationships that might exist. Given all these qualifications, it is not surprising that the analysis could uncover little relationship between school sex education and our pregnancy-related measures.

†That is, whether abortion was legalized later than 1969 and whether, as of 1980, minors had to obtain parental consent for abortion, and second-trimester abortions had to take place in a licensed hospital. (See: D. Bush, "Fertility-Related Laws Enacted in 1982," *Family Planning Perspectives*, **15**:111, 1983; H. Ory, J. D. Forrest and R. Lincoln, *Making Choices: Evaluating the Health Risks and Benefits of Birth Control Methods*, AGI, New York, 1983, pp. 26–27; and P. Donovan, AGI, personal communication, 1986.)

‡This index is based on three items: the number of physicians per 100,000 population in 1980, the number of ob/gyns per 100,000 population in 1976, and the percentage of general or family practitioners, ob/gyns and pediatricians who are willing to provide contraceptives to minors without parental consent. The first two items were obtained from M. A. Strauss (see footnotes to Table 3), the third is from unpublished tabulations of the Survey of Physicians in Private Practice, conducted by the AGI in 1982.

Table 4. Among women aged 15–19, standardized beta coefficients for rates of pregnancy, birth and abortion, and the abortion ratio, by percentage of teenagers served in organized family planning clinics and various controls

% served and controls	Pregnancy rate			Birthrate			Abortion rate			Abortion ratio		
	Total	White	Black	Total	White	Black	Total	White	Black	Total	White	Black
1. 3 basic controls	0.28*	0.44**	–	–	–	−0.16	0.44**	0.58**	–	0.35**	0.42**	–
2. 3 basic controls plus 1970 teenage birthrate	–	0.18*	−0.18	−0.29**	−0.33**	−0.28*	0.43**	0.61**	–	0.48**	0.65**	–
3. 3 basic controls plus % in counties with large abortion providers	0.23	0.42*	−0.16	–	–	−0.15	0.39**	0.52**	–	0.33**	0.38*	–
4. 3 basic controls, 1970 teenage birthrate and % in counties with large abortion providers	–	–	−0.18	−0.29**	−0.32**	−0.27*	0.39**	0.54**	–	0.45**	0.60**	–

*$p<0.05$. **$p<0.01$. Source: For percentage of teenagers served, see reference 18; for other variables see Tables 2 and 3.

high, birthrates are low and abortion rates and ratios are high. There is no significant association of the physician index with pregnancy rates for any subgroup. These are not unexpected associations, since some physicians are likely to provide abortion services as well as family planning services.

Family Planning Clinic Services

As noted earlier, the available data are far from ideal for evaluating the effect of family planning clinic services on teenage pregnancy–related behavior. First of all, statewide measures of teenage sexual activity and contraceptive use, the two key determinants of pregnancy, are missing. Both of these unmeasured factors can be expected to affect both the rates of unintended pregnancy, birth and abortion and the level of use of family planning clinics. In addition, since publicly-funded family planning programs were directed toward low-income women (including those receiving public assistance and sexually active teenagers), efforts were made to establish family planning clinics in areas where there were already high rates of unintended pregnancy. Moreover, the level of the teenage birthrate was an important criterion in the formula used by the federal government to determine the regional allocation of funds to be set aside for services to teenagers.[18] It is reasonable to assume that abortion services would also be established in areas with high pregnancy rates and birthrates. All of these factors can easily result in spurious relationships in cross-sectional models between family planning clinic use and rates of pregnancy, birth and abortion. An attempt was made in this analysis to utilize existing data to examine the relationships to the extent possible. The unavailability of data on sexual activity or contraceptive use, or on changes in teenage pregnancy over time, however, still clouds the findings.

Our measure of family planning clinic use is the percentage of teenagers served by family planning clinics in 1980.[19]

The standardized beta coefficients showing the relationships between family planning clinic use and measures of teenage pregnancy, birth and abortion are shown in Table 4. The first row of the table shows the coefficients including only the three basic controls employed elsewhere in our cross-sectional model. The second row shows coefficients holding constant the 1970 teenage birthrate, one approach to controlling for the confounding association between birthrates and pregnancy rates and the location of clinics. Thus, it is possible to look at the relationship of use of clinic services and fertility, even where birthrates were high to begin with. Unfortunately, as we have noted, a similar "lagged" variable is not available for earlier rates of teenage abortion (because abortion was illegal in most states in the early 1970s) and, therefore, of teenage pregnancy. Thus, relationships with the abortion and pregnancy rates are still likely to be spurious. The third row adds to the three basic control variables a control for the percentage of the population living in counties with large abortion providers. This control is introduced because it is plausible that high levels of teenage pregnancies (84 percent of which are unintended at the national level[20]) would stimulate provision not only of family planning services but of abortion services as well. The fourth row of the table controls simultaneously for all these factors—the basic control variables, the 1970 teenage birthrate, the 1980 availability of large abortion providers and the percentage of teenagers served.

It can be seen that controlling for the preexisting birthrate (row 2) has strong effects on the relationship between program effort and pregnancy rates as well as birthrates, even though the control introduced reflects only the level of births, not the level of total pregnancies. The positive coefficients for pregnancy among all teenagers, seen in row 1, when only the three basic control variables are entered, become insignificant; the coefficient for white teenagers is greatly reduced; and among black adolescents, a small negative coefficient emerges. Most important, a significant *negative* association is found between the percentage of teenagers served and the teenage birthrate in 1980 for all three groups.

Row 3 of Table 4 shows that when the availability of services from large abortion providers is controlled for, the positive relationship of the percentage served with the pregnancy rate for all teenagers is no longer statistically significant, and the relationship is reduced among whites.

Row 4 shows the results when all of these controls are introduced simultaneously. The association of the percentage served with the birthrate continues to be strong and negative, while the association with the pregnancy rate is close to zero for the total group and for whites; and it is negative, though still not statistically significant, for blacks. In absolute terms, when all controls are introduced, in states where the proportion of teenagers served by family planning clinics is 10 percent higher, the total and white adolescent birthrate is 10 points lower, and the black teenage birthrate is 13 points lower. (The black teenage pregnancy rate is also 16 points lower, although this result is not statistically significant, probably because of the small number of observations.)

A negative relationship between the percentage of teenage patients served by family planning clinics and the teenage birthrate was found in an earlier analysis of counties for the mid-1970s, a finding that supports the results found here after controls are introduced for preexisting birthrate levels.[21]

The continued positive relationship of the percentage served with the abortion measures suggests dual responses to the problem of unintended fertility—use of contraceptives to prevent pregnancy by some, and recourse to abortion to prevent births by others who have unplanned pregnancies. The lack of controls for state-specific sexual activity rates and for total proportions using contraceptives is doubtless muddying the relationships presented here. The pregnancy rate may have been even higher in the absence of family planning clinics. If it were possible to control for the 1970 pregnancy rate as we have for the 1970 birthrate, it would be possible to clarify the relationship between use of family planning clinic services and pregnancy rates.

•*1970–1980 fertility change.* Another approach to investigating whether a positive relationship between the percentage served by clinics and teenage birthrates is reflecting the placement of clinics in areas with high birthrates is to examine whether states in which there was a relatively large increase in the proportion of women served by family planning clinics between 1970 and 1980 also experienced a relatively large decline in teenage fertility during the decade. Because data on the number of teenagers served in 1970 are unavailable, change in the percentage of all women aged 15–44 served by family planning clinics between 1970 and 1980 was employed as the explanatory variable. (It is not possible to undertake a similar analysis of changes in pregnancy rates because, as we have noted, earlier measures of pregnancy by state are not available.) The three basic controls (percentage black, metropolitan and poor in 1980) were also included.

Change in the birthrate between 1970 and 1980 among all 15–19-year-olds, and among white and black teenagers, was the dependent variable. As the table below shows, after including the three basic controls, the greater the increase in the percentage of women served in family planning clinics between 1970 and 1980, the greater the decline in the birthrate among all teenagers, and among white and black teenagers considered separately. Regression results for birthrate decline are as follows:

Race	**Standardized betas:**	
	Controls plus change in % served	**Controls, change in % served and large abortion providers**
Total	0.53**	0.44**
White	0.46**	0.41**
Black	0.34*	0.29*

In absolute terms, an increase of 10 percent in the proportion of women aged 15–44 served between 1970 and 1980 was associated with a birthrate decline of about 27 points for all teenagers—25 points for whites and 19 points for blacks.

An earlier analysis of counties also found that a rise in the percentage of teenagers enrolled in family planning clinics was associated with a more rapid decline in the teenage birthrate between 1970 and 1975.[22] Similarly, an interstate analysis showed that increased use of contraceptive services provided by clinics was associated with an accelerated decline in the birthrate between 1970 and 1974.[23] Possibly, if information had been available on change in the pregnancy rate between 1970 and 1980, we would have seen similar declines (or smaller rises) in pregnancy over the decade in states with high levels of clinic attendance. Unfortunately, the data to test this hypothesis do not exist.

It is possible that an increase in availability of large abortion providers could also have contributed to the birthrate decline. There is no measure of change concerning this factor for the 1970–1980 period. However, the association was estimated by using availability of large providers in 1980 as a proxy for change. This involves making the not unreasonable assumption that states in which there was substantial availability of such providers in 1980 had had a substantial increase in availability during the decade. The results show that change in the birthrate was greatest where large abortion providers were most available, but the relationship between the increased percentage of women served and decreased birthrates remained significant for all teenagers, and for whites and blacks considered separately. The beta coefficients for the percentage of teenagers served (as shown above) declined only slightly, and remained significant in all three groups.

"High-Rate" and "Low-Rate" States

As noted in the discussion of Table 1, there are some half-dozen states in which adolescent birthrates and abortion rates are both relatively low, and another half-dozen in which both are relatively high. The former tend to be in the north central or midwestern parts of the country, the latter are largely in the South and West. Although the small number of states involved preclude multivariate analysis, the simple correlation coefficients show that the states with low rates have a good deal in common besides region, as do the half-dozen states with high rates.

As compared with states that have relatively high levels of pregnancy, abortion and birth, those with low rates have smaller populations, a smaller percentage of blacks and Hispanics and a lower proportion living in urban areas. These states experienced a smaller growth in total population between 1970 and 1980 and had more modest residential mobility. Poverty was also less prevalent in the states with low rates—especially as compared with the three high-rate states in the South. However, AFDC payments tend to be higher in the low-rate states. The low-rate states display a higher level of social, institutional and family integration. That is, the percentage of children living in female-headed households and the percentage of high school dropouts are lower; the percentage of high school graduates is higher; and the rate of teenage suicide is lower, as are the sales levels of sexually explicit magazines, the crime rate and the index of stress. The residents of low-rate states are less likely to be fundamentalists; women's status tends to be higher, as is political liberalism. Abortion services are less available in the low-rate states (possibly because of less demand). A smaller proportion of teenagers utilize family planning clinics, and the availability of private physicians is somewhat lower. These findings suggest that the general social milieu in which teenagers live is the most important factor associated with their rates of birth, abortion and pregnancy, and that use of contraceptives reflects the level of sexual activity in the population.

Discussion

By and large, the results of this analysis show that demographic, social and economic characteristics (which can also include educational attainment) are more important than policy measures in explaining the differences between states in the rates of teenage pregnancy, birth and abortion, especially among whites. Among black teenagers, this generalization essentially holds for birthrates, but is less true for pregnancy and abortion rates. Among white teenagers, with three exceptions, policy factors add, at most, 14 percent (but, more typically, 1–10 percent) to the variance already explained by the three control factors. In contrast, the demographic, social and economic factors add as much as 52 percent to the variance already explained, and many add more than 20 percent, with particularly strong effects for pregnancy and abortion rates (not shown).

The exceptions for white teenagers involve the association between sex education in high school and the pregnancy rate, the association between the availability of doctors and the abortion ratio, and that between Medicaid funds for abortion and the abortion ratio. A few policy factors are also more important than the socioeconomic variables for pregnancy and abortion rates among black teenagers. These are Medicaid funding for abortion and the availability of doctors (which add 16–25 percent to the variance explained for abortion rates and birthrates), and some measures of AFDC availability (which add 16–25 percent to the variance for pregnancy rates and abortion rates).

For both whites and blacks, some policy variables are as important as social integration measures in their associations with abortion: The adult abortion rate, the availability of Medicaid funds for abortion and (for the abortion rate only) the index of nonrestrictive abortion policies all have strong associations with the level of abortion, in some cases, stronger associations than do the social integration factors. The availability of doctors and the percentage of the population in counties with large abortion providers have important associations with the black abortion rate, but make somewhat smaller though still significant contributions for white teenagers, relative to social integration measures.

However, few of the social integration measures have a significant association with the abortion *ratio* for whites (and none do for blacks). Thus, it would appear that poor social integration has little relationship with the probability that either white or black teenagers will choose to have an abortion.

The relatively small associations between the various social characteristics and the black teenage pregnancy, abortion and birth measures, as compared with such associations for whites, may reflect a low level of integration between the black population and the white majority group. It is also likely that our understanding of the factors that may influence pregnancy-related decisions among black teenagers is incomplete and that several factors have not been identified or measured. One interesting finding is that the availability of doctors and of large abortion providers and, especially, the availability of Medicaid funding for abortion have stronger associations with the abortion rate of black than of white teenagers. The finding concerning Medicaid is plausible, because a higher proportion of blacks are poor and eligible for Medicaid and may need public funding in order to obtain abortions. It is notable, in light of the greater significance of subsidized services for black teenagers, that in states where there are substantial public expenditures for family planning, the black teenage abortion rate is relatively low, even though not significantly so (not shown).

The results strongly suggest that AFDC programs with higher benefits and more comprehensive coverage, which usually coincide with higher public spending in other areas and, probably, with better opportunities for teenagers, are not associated with high teenage birthrates.

Access to large abortion providers is associated with relatively high pregnancy rates, probably because services are more available where pregnancy levels—and, thus, the need for abortion—are higher. The significantly lower black teenage birthrates in states where Medicaid funds are available for abortion suggest that public funding of abortions makes a big difference in the level of childbearing among black teenagers.

The positive associations between the availability of subsidized contraceptive services and the abortion rate and ratio for white teenagers may well reflect the coexistence of multiple approaches to reducing teenage births in states where levels were already high. Moreover, subsidized family planning tends to be more available in states with wide availability of abortion services; both reflect high rates of unintended pregnancy.

Subsidized family planning clinics were more important sources of contraceptive services during the 1970s for black than for white teenagers. (In 1980, 27 percent of all black teenagers as compared with 13 percent of white teenagers attended clinics.[24]) A strong association is nevertheless found between the increase in the percentage of women served by clinics and the decline in the teenage birthrate among both blacks and whites. Where the increase in the percentage served was greater, the decline in the birthrate was greater.

This analysis suggests that the broad social setting within which teenagers make or fail to make decisions about reproduction is of major importance in determining their chances of becoming pregnant, of having an abortion and of giving birth. A more stable family system, a more integrated community and social structure and a more liberal social climate are conducive to lower rates of teenage pregnancy and birth. Provision of contraceptive and abortion services does play a role in the overall picture: When factors that accompany a preexisting high birthrate are held constant, publicly subsidized family planning services are associated with lower birthrates in 1980. Moreover, the greater the increase in provision of publicly supported family planning services during the 1970s, the greater was the decline in the teenage birthrate during the decade. However, abortion services were increasingly available in the same states that had higher levels of clinic service: There appears to be such a dual response in states that have the problem of high levels of teenage pregnancy. Nevertheless, after controlling for the availability of abortion services, a negative relationship is found between use of public family planning services and the level of teenage birthrates.

While the availability of both publicly supported family planning services and abortion services assists teenagers in controlling pregnancies and births, unintended teenage pregnancies, births and abortions continue to be unacceptably high, especially in states that have had high rates since the early 1970s. The heavy social costs exacted by teenage pregnancy are acknowledged, but there is disagreement on the means by which teenage pregnancy can be reduced. This analysis suggests that simultaneous advances are needed on many fronts.

Appendix 1: Data Issues

Birthrates are from publications of the National Center for Health Statistics (NCHS);[25] abortion rates are from the AGI and the Centers for Disease Control (CDC).[26] Data on abortions are collected by state departments of health and assembled by the CDC. State data are adjusted for undercounts, as determined by comparing the AGI's estimates, based on a national survey of all identified abortion providers, with the CDC's data.[27] However, data on abortions according to such characteristics as age and race are not available for all states. For a few states, the abortion rate for 15–19-year-olds has been estimated as a function of the abortion rate for women aged 15–44, which is justified by the high correlation ($r=0.95$) between teenage and total abortion rates.* Teenage abortion rates by race are available for only 32 states, and have not been estimated for the remaining 18 states.† This limitation applies also to pregnancy rates and abortion ratios. In addition, for the black subgroup analysis, states with black populations of under 50,000 are excluded, since all measures for blacks in these states would be unstable. This removes 10 additional states from the analysis of fertility rates for black teenagers.‡ As a result, abortion rates, pregnancy rates and abortion ratios for the black population are available for only 22 states, compared with 34 states for the birthrate.

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*The states for which the abortion rate for 15–19-year-olds was estimated are Alabama, Alaska, Connecticut, Florida, Iowa, Kentucky, New Hampshire, Texas, West Virginia and Wisconsin.

†Abortion rates for white teenagers were unavailable for Alabama, Alaska, Connecticut, Delaware, Florida, Iowa, Kentucky, Massachusetts, Michigan, Nebraska, New Hampshire, Pennsylvania, Rhode Island, Texas, Washington, West Virginia, Wisconsin and Wyoming.

‡Abortion data for blacks were unavailable for the same 18 states as for whites, and for: Hawaii, Idaho, Maine, Montana, New Mexico, North Dakota, Oregon, South Dakota, Utah and Vermont, all of which have black populations of under 50,000. Missing states with large black populations are Alabama, Florida, Michigan, Pennsylvania and Texas. States with a black population of 50,000 or more were included in the analyses of black teenage reproduction because, on average, a population this size would have about 2,500 teenage women, yielding 2,500 years of exposure in any given year as the denominator of a fertility, pregnancy or abortion rate. A denominator of this size should yield a reasonably reliable rate.

Means of the most important independent variables have been calculated for groups of states that have abortion data and for those that do not. No large differences have been found between states that were excluded because of the unavailability of abortion data and those that were included.

Appendix 2: Methodological Issues

Although a path-analysis approach, allowing for two-way relationships, would have been preferred for the analysis, given the small number of cases (ranging from 22 to 50) and the large number of factors that should be considered, such an elaborate model was considered inadvisable. The compromise reached was to apply a limited multiple regression model. The disadvantage of this procedure is that it does not allow for the portrayal or investigation of the complexity of the relationships that we know exist. This limited multiple regression procedure allowed the investigators to look at the association between the factors of interest and teenage reproduction after controlling for three contextual variables that precede and influence several of the independent and dependent factors, and that would be difficult to change by governmental effort without major modifications in federal or state policies. The aim of the analysis is to see whether factors other than the three basic controls have significant effects after the three are held constant. Because of the small number of cases in the study, introduction of more controls would have been problematic. Interpretation of the results is limited to inferences about associations between characteristics of the states and the state-level measures of teenage reproduction. It is not extended to imputing causation not only because it is not possible to control for all important factors but also because some independent factors may respond to, as well as influence, the dependent ones.

The three control factors are related to each other; the percentage poor is higher where the percentage black is higher ($r=0.51$), and the percentage poor is lower where the percentage metropolitan is higher ($r=-0.49$). The percentage black and the percentage metropolitan in the total population are not strongly associated ($r=0.14$), but the percentage black is strongly associated with the percentage metropolitan in the black population ($r=-0.54$). In other words, in states where there is a higher percentage of blacks, a lower proportion of blacks live in metropolitan areas.

The multiple regression model considers the three contextual factors with each variable of interest added in one at a time. All four factors (the three controls and one other independent factor) are entered simultaneously with one of the dependent variables. One complication affecting the regression analysis is, as we have noted, that abortion data for some age and race subgroups and, therefore, pregnancy rates and abortion ratios, are missing.

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Estimating the Public Costs of Teenage Childbearing

By Martha R. Burt

Summary

A formula for making national, state and local estimates of the cost to the public of teenage childbearing is derived from a review of 12 studies. The formula is then applied to U.S. data. The calculations yield a single-year cost for 1985 of $16.65 billion paid through three programs—Aid to Families with Dependent Children, food stamps and Medicaid—for women who first gave birth as teenagers. The calculations also show that the public will pay an average of $13,902 over the next 20 years for the family begun by each first birth to a teenager in 1985 and $5.16 billion over the same period for the families of all teenagers experiencing a first birth in 1985. If all teenage births were delayed until the mother was 20 or older, the potential savings to the public would be $5,560 for each birth delayed and $2.06 billion for the entire cohort of teenagers who would otherwise have had a first birth in 1985.

Previous Studies

Teenage childbearing has become an increasingly newsworthy topic as legislators, program officials and the general public have become aware of its tremendous social and financial costs. During the last decade, several attempts have been made to obtain reliable estimates of the financial costs of childbearing among adolescents. Most interest has focused on public costs—through Aid to Families with Dependent Children (AFDC), food stamps, medical assistance and social services; however, at least one study has also looked at private costs. Some studies have explored the costs of teenage childbearing at a national level; others have focused on a single state, county or other local geographic area.

This article will review the 12 existing studies of the financial costs of teenage childbearing, and, on the basis of the approaches used to date, will develop a methodology for making consistent and comprehensive estimates of the costs to the public at the national, state and local levels. The methodology so derived will then be applied to U.S. data to obtain national estimates of the cost of teenage childbearing per year, per teenager's childbearing career and per cohort of teenagers giving birth in a single year.

The studies that are reviewed use varied methodologies, and they arrive at quite different cost estimates. Some studies calculate the public cost over a 20-year period for the family begun by a single teenage birth, as well as the total cost over the same 20-year period for the families begun by the cohort of babies born to teenagers in a single year. They ask, for example, what the childbearing career of a woman who has her first baby as a teenager in 1985 will cost the public by the time her first baby reaches adulthood. The model study of this type was conducted by SRI International for the Population Resource Center.[1] The study estimates that the family begun by each first birth to a teenager in 1979 would eventually cost taxpayers $18,710 (in 1979 dollars) for household support; further, it estimates that all such families begun by first births to teenagers in that year alone would eventually cost taxpayers at least $8.3 billion (in 1979 dollars). Throughout the rest of this article, such costs will be referred to as the "single-birth cost" and "single-cohort cost," respectively.

Other studies based on the same methodology include one for Mecklenburg County, North Carolina, and one for the St. Louis metropolitan area.[2] The Mecklenburg County study estimates the single-birth cost resulting from a child born to a teenager in 1979 to be $13,852 (in 1979 dollars), and the single-cohort cost of all such births to be $12 million. The St. Louis study estimates the single-birth cost for that metropolitan area to be $17,675 (in 1981 dollars). The single-cohort cost is estimated at $82 million (in 1981 dollars).

The methodology uses as its denominator all teenagers experiencing a first birth. Many of these mothers never receive welfare. The cost estimates are averages that spread the public cost arising from some teenagers over first births to all teenagers. Therefore, the estimates will be considerably lower than those that include only welfare recipients in their base.

Some studies estimate the total public outlay for families begun by teenage births in a given year, including expenses for families that were started when the mother was a teenager, even though she is now older. Only about 3–4 percent of the AFDC caseload at any time consists of families headed by women who are currently teenagers, but approximately half of AFDC households were started as a result of teenage births.[3] Therefore, total public cost for a single year is very large. The model study of this type, conducted by The Urban Institute, estimates that the public spent $8.55 billion in 1975 on AFDC, Medicaid and food stamps for families begun by teenage births.[4] The researchers subsequently used simulation techniques to estimate a parallel figure for 1990. Expressed in 1982 dollars, that estimate comes to $5.83 billion; it is considerably lower than the 1975 figure because of the institution of more restrictive eligibility criteria for welfare programs as a result of the Omnibus Budget Reconciliation Act of 1981. Finally, a parallel study for Monroe County, New York, arrives at estimates of $26 million for 1977 and $24 million for 1978.[5] Figures of this type will be referred to as the "single-year cost" throughout this article.

A number of studies ask somewhat different questions. Two calculate costs only for the year in which the birth occurs and only for children whose mothers are 20 or younger

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at the time of the study.[6] Three do not include the cost of one or more of the three major public programs (AFDC, Medicaid and food stamps) in all or part of their calculations.[7] Three use only teenage mothers receiving public assistance or those designated in some way to be of low or marginal income as the denominator, rather than all teenagers giving birth, so that the cost estimated per birth is not adjusted for the probability of receiving welfare.[8] All of these estimates may be important locally, but they are not as comprehensive as those derived from the more inclusive methodologies on which this article focuses. In addition, questions about the cost of a particular aspect of a program can always be answered by following the more comprehensive methodologies.

Of the studies reviewed for this article, only one attempts to calculate private as well as public costs.[9] Children require expenditures whether or not they are born to teenagers. Generally, parents pay the expenses of raising their children, both in direct cash outlays and in opportunity costs.[10] Businesses pay their share, too, through insurance for employees and their families, through taxes for schools and other services for children, through the costs of crimes committed by children, and so on. While there is nothing intrinsically wrong with trying to estimate private as well as public expenditures for children, the public focus remains the principal concern of policy-makers. Private costs are not included in the estimates presented in this article.

Assumptions Regarding Public Costs

The 12 studies vary in the assumptions they make about several critical dimensions of the calculations: which public costs to include; whether to base calculations only on teenagers who have a first birth during the year in question, or also on teenagers experiencing second and higher order births during that year; whether to base calculations on all teenagers experiencing a birth, or only on unmarried teenagers; whether to discount the cost in future years; whether to calculate marginal or full cost; and how many years to project. These issues are discussed below.

• *Which of the many relevant public programs are the most important ones to include in estimating the costs of teenage births?* The three imperatives are AFDC, Medicaid and food stamps, since they constitute the largest public programs reaching the greatest numbers of households. After these three, other inclusions will depend on the availability of data and the researcher's conviction as to the magnitude of the cost and the policy importance of the service. A few of the additional costs calculated in some of the studies that were reviewed include emergency and one-time payments for AFDC households; social services; job training; and housing. The single-birth and single-cohort estimates presented in this article include social services and housing costs.

The Monroe County study found that emergency and one-time payments amount to 13 percent of the combined cost of AFDC, Medicaid and food stamps.[11] Such payments may or may not be included in any AFDC expenditure figure obtained from local officials that would be used to calculate a single-year cost. They are almost certainly not included in any estimate of the average monthly benefit per recipient—the figure used in calculating single-birth and single-cohort costs. If state or local authorities make moderate or heavy use of these types of supplemental payments to AFDC households, a researcher estimating costs for that state or locality might want to ensure that such outlays are included.

Expenditures for social services buy many different things. In an Illinois study, social services mean special teenage pregnancy and parenting programs, and constitute a tiny proportion of total estimated costs.[12] In Mecklenburg County, this category means day care and school lunch programs.[13] Social services amount to 15 percent of single-birth and single-cohort costs in SRI's calculations, but that study does not define what is included in the term.[14] The St. Louis study simply adds five percent of AFDC costs for social services, without trying to develop estimates based on agency data.[15]

Foster care for the children of teenage parents is potentially very costly, and researchers making local estimates of single-year costs may want to include this type of program. The Illinois study cites an estimate by the Illinois Department of Children and Family Services that 20 percent of referrals for child abuse and neglect involve parents aged 19 and younger; nine percent of the referrals each year result in foster care, at an annual cost of $4,800 per referral.[16] New York has estimated that at least 20 percent of the children in its foster-care system were born to mothers who experienced their first birth as a teenager.[17]

However, the data necessary to include foster-care expenditures in single-birth or single-cohort costs (which are projections up to the child's adulthood) do not exist, because there is not enough evidence on what the probability is that a given teenage mother will have a child removed from her custody. One cannot, therefore, assign an expected value for the cost of foster care to a single individual. To do that, the researcher would have to know both the cost of the care and the probability that the mother would need to use it.

Job training and housing costs are included in some studies. Job training is costly, but it usually occurs during a single year, and a very small proportion of teenage parents receive it. Housing costs have been calculated by estimating the proportion of public housing units occupied by households that were established as a result of a teenage birth—a proportion that amounts to five percent, according to the SRI and St. Louis studies.[18] In these two studies, housing costs are between one and two percent of total AFDC expenditures. While expenditures for public housing are relevant, so are rent subsidies for private housing, which may cost as much as or more than public housing. Neither cost may be worth calculating from agency data, and estimates based on assumptions about their magnitude may be the best approach.

• *Should the denominator consist only of teenagers experiencing a first birth, or should it include all teenagers giving birth that year, regardless of parity?* Twenty-three percent of all teenagers giving birth in 1984, for example, were having a second, third or even fourth child.[19] Only teenagers experiencing first births, however, are used for the estimates presented in this article. Probabilities of subsequent births are calculated for teenagers having their first birth at various ages, and the costs associated with subsequent births are added to the cost of the first birth, to produce an estimate covering the period for which expenditures are projected. This approach focuses on the teenager's childbearing career: A first birth in adolescence triggers a chain of events, some of which entail public cost. Second and higher order births are part of that chain of events, in that an early first birth increases the probability of subsequent fertility.

• *Should births to all teenagers or only to unmarried teenagers be included?* All the studies reviewed for this article, and the national estimates for 1985 presented later, include births to all teenagers. Teenage mothers, whether they marry or not, have a statistically higher probability of receiving welfare at some time in their lives than do women who delay childbearing. Loss of schooling and higher subsequent fertility accompany all teenage childbearing, not just that among unmarried adolescents; indeed, these consequences are more pronounced among teenagers who marry.[20] The two factors reduce the mother's ability to support herself and her children, and increase public-sector costs.

• *Is a dollar tomorrow worth a dollar today?* The answer is no; a dollar, if invested rather than spent today, will be worth more tomorrow. Discounting deflates projected costs by the amount a dollar invested today could earn (compounded, minus inflation) by the time it is needed to cover the future cost of supporting families begun by teenagers. Discounting is only relevant when calculating single-birth and single-cohort costs and is used in this article only for those estimates. It does not apply to single-year cost, since the year for which one is making the estimate is the present one, and the present value of a dollar is the appropriate figure to use.

- *Should one calculate the actual cost to the public of a teenage birth, or the difference in public cost between a teenage birth and a later birth?* The issue arises because approximately one in 10 women who wait until after their teenage years to begin childbearing also receive public support.[21] In addition, even the best interventions are likely only to delay an initial teenage birth, not prevent it entirely, although subsequent births may be prevented altogether. This article calculates both the total cost of a teenage birth and the marginal cost—the difference between what the public pays for a teenage birth and what it pays for a delayed birth. The total cost is important because it tells how much cash the public will have to lay out both now and in the future. The marginal cost is not quite as large, but presents a more realistic picture of what the public would save if the birth were delayed. Through computer simulation, an Urban Institute study estimates that a 50 percent reduction in births to women aged 19 and younger would reduce the 1990 single-year public cost by 20 percent. Total elimination of births to unmarried women 17 and younger would reduce the 1990 cost by 17 percent, and a 50 percent reduction in births to these young women would reduce it by 10 percent.[22] There is no one-to-one relationship between teenage childbearing and public cost, because teenage births in these simulations, as in reality, are mostly delayed rather than eliminated, and because factors associated with poverty still characterize the lives of many teenagers, even when the computer simulation artificially prevents them from having births. These factors eventually lead to public dependency for some proportion of teenagers.

The marginal cost is, thus, a very important figure to calculate, but it is not easy to estimate adequately what proportion of the cost is marginal. The model this article presents uses 40 percent of the full cost of teenage childbearing as the marginal cost associated with a teenage birth as opposed to a birth occurring at age 20 and older. The 40 percent figure was developed by assuming no births to teenagers and by doubling the 20 percent savings that The Urban Institute estimated would be achieved by a 50 percent reduction in births to mothers younger than 20. Therefore, the public could expect to save 40 percent of the full cost of teenage births by eliminating teenage births altogether.

- *For how many years are the teenager and her family potential recipients of public support, following the birth of her first child?* The base number of years would be 18, representing the age at which a child born to a teenager would no longer be a minor, and would no longer be eligible for welfare. The SRI study used 20-year projections, however, because the levels of subsequent fertility known to be associated with teenage births—30 percent experience a second pregnancy within two years of a first birth[23]—suggest the possibility of public support during the growth to adulthood of more than one child.

The model outlined in this article also makes 20-year projections, but using a shorter period would be acceptable if good reasons for doing so exist and if the number of years covered by the calculation is always made clear. One might, for example, project only 10 years after the first birth, both because most medical costs occur in those years and because the probability of receiving welfare diminishes in the second decade after a teenage birth.

1985 Single-Year Costs

The single-year costs in 1985 for the three major public programs are shown in Table 1. Total AFDC expenditures for 1985—almost $16 billion—have been obtained from U.S. budget estimates and include administrative costs.[24] To derive total food stamp expenditures for AFDC recipients, the average monthly food stamp allocation per individual in 1984 ($42.80)[25] is increased by two percent (to $43.66) for 1985.* This figure is multiplied by 12 to obtain an annual estimate, and administrative expenses of 12 percent are added.[26] The result is then multiplied by the estimated number of Medicaid recipients who were on AFDC in 1985,†[27] and adjusted for the 75 percent participation rate of AFDC households in the food stamp program.[28] These procedures produce an estimate of more than $6 billion in food stamp expenditures for AFDC households.

Table 1. Estimates of public outlays for AFDC, food stamps and Medicaid paid to all recipients and to families begun by a teenage birth, 1985

Program	All recipients (in billions)	Teenage mothers (in billions)
Total	**$31.40**	**$16.65**
AFDC	15.69	8.32
Food stamps	6.45	3.42
Medicaid	9.26	4.91

Medicaid expenditures are estimated in a similar fashion. First, annual average costs of $889 per AFDC adult and $435 per AFDC child in 1985 have been derived by inflating the 1984 figures by five percent.‡ Administrative expenses of five percent are added next.[29] These average costs are then multiplied by the number of AFDC adults (5,381,000) and AFDC children (9,285,000) receiving Medicaid in 1985.[30] The result is an estimate of more than $9 billion in Medicaid expenditures for AFDC families.

The second column of Table 1 shows the 1985 public outlay through these three programs attributable to families established as a result of teenage childbearing. The total outlay of nearly $17 billion indicates that families started by a teenage birth absorb approximately 53 percent of total public expenditures. This finding is conservative, since several other studies have produced estimates ranging from 50 to 60 percent.[31] The figures in the table include both direct payments to individuals and the administrative costs of the three programs. If administrative costs were excluded, the estimate would be $15.08 billion.

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*Per-recipient food stamp allocations are indexed to the food component of the Consumer Price Index; increases in food stamp allocations have averaged 2–3 percent a year. Thus, using two percent as the factor for inflating the 1984 average figure per recipient produces a conservative estimate.

†So that estimates of Medicaid and food stamp expenditures would be based on the same number of AFDC recipients, the number of Medicaid recipients who are on AFDC is used as the basis for calculating both Medicaid and food stamp costs. The food stamp estimate is then adjusted for the participation rate of AFDC households in the food stamp program.

‡The 1984 data were obtained from the Medicaid Hotline (301-597-1417). The figures used are Medicaid costs for AFDC recipients exclusively, and do not include any costs associated with Supplemental Security Income or elderly Medicaid recipients. The Consumer Price Index for hospital-based medical care (inpatient and outpatient combined) has increased an average of 11.6 percent per year over the past eight years. Medicaid expenditures have increased an average of 12.1 percent annually during the same period (see: Committee on Ways and Means, 1985, op. cit., Appendix E, Table 1, reference 3). However, these inflation figures are for all hospital and Medicaid users. The population includes elderly non-AFDC individuals, who are probably responsible for a disproportionate share of the increase in expenses. Consequently, using a five percent inflation factor seems a reasonable and conservative approach.

Table 2. First births to teenagers in 1985, consequent public costs, and potential savings associated with delaying such births

Age at first birth	No. first births	Public costs		Savings	
		Single birth	Single cohort*	Single birth	Single cohort*
All	**371,131**	**$13,902**	**$5.16**	**$5,560**	**$2.06**
<15	9,638	17,724	0.17	7,089	0.07
15–17	144,308	17,689	2.55	7,076	1.02
18–19	217,185	11,214	2.44	4,485	0 97

*In billions of dollars.

Probably the only comparison figure available is the 1975 Urban Institute estimate of $8.55 billion. (That figure does not include administrative costs, which would add another $0.88 billion.) Inflating $8.55 billion to a 1985 equivalent using the Office of Management and Budget deflator, which incorporates actual inflation rates, yields an estimate of $16.33 billion ($18.01 billion with administrative costs added).[32] This method probably results in an overestimate, since public expenditures have not always been allowed to rise with inflation.

Inflating $8.55 billion in 1975 dollars using a factor of 1.79 (which is the 1975–1985 actual growth in average monthly payments to AFDC recipients) yields an estimate of $15.34 billion. This figure compares well with the author's estimate, excluding administrative costs, of $15.08 billion for 1985. Medicaid expenditures grew at a faster rate than did AFDC outlays, so this is probably a conservative estimate. Thus, the single-year costs estimated for 1985 appear to be well within the bounds of probability compared with other ways of estimating the same expenditures. In addition, the 1985 figure of $16.65 billion includes only the sums expended in the three major programs. Not included are other services that are more likely to be used by families begun by a teenage birth than by other families, such as publicly supported social services, housing, special educational programs, foster care and child protective services. Many of these figures are not available nationally, and may not be available locally, so $16.65 billion is a minimum figure.

Single-Birth and Single-Cohort Costs

To estimate single-birth and single-cohort costs, which are projections over a 20-year period, researchers must make a number of assumptions in addition to those already discussed. For example, since the projection traces a teenager's childbearing career from the time of her first birth, and counts subsequent children and their associated cost as part of the cost of the initial birth, some assumptions about the number and timing of subsequent births are necessary. Estimates made by The Urban Institute are used for that purpose.[33] The estimates are that teenagers who have their first baby at age 17 or younger will have 2.1 children by age 22, 2.8 children by age 27 and 3.2 children by age 32. Women whose first child is born when they are 18 or 19 will have 1.6 children by age 22, 2.4 by age 27 and 2.8 by age 32. These figures are used to calculate annual average increases in family size, which in turn are used when calculating the number of household members eligible for AFDC, food stamp and Medicaid support and when adding extra medical expenses for pregnancy and childbirth.

The computation of the number of household members eligible for public benefits is based on the assumption that no one 16 or younger heads her own household, but that all women 20 and older head their own households. With respect to the intermediate ages, it is assumed that 25 percent of 17-year-olds, 50 percent of 18-year-olds and 75 percent of 19-year-olds head their own households.

In this article, 0.34 is used as the probability that teenage mothers will receive welfare between ages 15 and 19.* At age 20 and older, the probability depends on the age of the woman at the time of first birth. For women whose first child was born when they were 17 or younger, the probabilities are 0.20 when they are 20–24, 0.16 when they are 25–29 and 0.02 when they reach 30 and older ages. For women 18 or 19 at first birth, the comparable probabilities are 0.15, 0.09 and 0.03.[34]

Application of these probabilities is quite straightforward if one is estimating costs only for 18-year-olds or only for 15-year-olds. However, in the current methodology, we combine young women aged 15–17 and 18–19 to arrive at an estimated cost. This approach requires some adjustments of the probabilities applicable to the transition years. For example, among 15–17-year-olds, the 17-year-olds will turn 20 in the fourth year of the projection and will be subject to a 0.20 probability of receiving welfare; the 15–16-year-olds, however, will be only 18–19 in the fourth year, so the 0.34 probability of receiving welfare will still be applicable to them. Therefore, the probability used for the fourth year of the projection will be the average of the probabilities for each age weighted by the proportion of the group at each age. The same sort of adjustment must be made for each year that part of the group is old enough for the next applicable probability, but part of the group is not.

The probabilities of receiving AFDC among women 20 and older are 4–15 percent lower than those used in the SRI study (the actual proportion depends on the woman's age and age at first birth), because the present estimates reflect the more restrictive criteria that were set for welfare eligibility by the Omnibus Budget Reconciliation Act of 1981.

Inflation is assumed to average five percent per year over the 20 years of the projection. Money invested in 1985 is assumed to grow at a real interest rate of four percent annually after allowing for inflation. Thus, four percent compounded annually is used as the discount rate. This practice follows the discounting procedure used by SRI International.[35]

The number of first births to teenagers is taken from 1984 natality data,[36] which are the latest available. The figures for 1985 are assumed to be the same and are shown in the first column of Table 2. The table also presents estimates of the total public outlay over the 20-year period from 1985 to 2004 for a woman who had her first birth as a teenager in 1985 (single-birth cost) and for all women who first gave birth as teenagers in 1985 (single-cohort cost).

The single-birth cost of $13,902 can be compared with SRI International's estimated $18,710 for a first birth in 1979, with the estimate of $17,675 for a first birth in St. Louis in 1981 and with the estimate of $13,852 for a first birth in Mecklenburg County in 1979.[37] All other things being equal, one would have expected the 1985 estimate to be higher than any of these earlier estimates, simply because of inflation. The major reason for the 1985 estimated cost being lower is that a teenager's probability of receiving public assistance was reduced, because of the more restrictive eligibility criteria that were introduced in the Omnibus Budget Reconciliation Act of 1981. Thus, changes in the availability of welfare support make a substantial difference in the long-term fiscal consequences of teenage childbearing. Single-birth costs were multiplied by the number of teenagers who experienced first births in 1985 to arrive at the single-cohort costs.

The table also presents the potential savings to the public if all teenage births were

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*The 0.34 figure is derived by weighting the AFDC probabilities estimated by Kristin Moore for teenagers experiencing first births at different ages by the proportion of teenagers of each age represented in the 1984 first-birth statistics and the number of teenage years remaining to them after the first birth (see: K. A. Moore, 1978, op. cit., reference 21). A single probability figure for all teenagers throughout their teenage years of dependency on AFDC was sought to simplify calculations.

Figure 1. Worksheet for calculating single-birth cost

1. Age at first birth (check one):	___ 14 or younger		___ 15–17	___ 18–19						
2. Year after first birth	1	2	3	4	5	6	7	8	9	10
3. Age that year	15–17	16–18	17–19	18–20	19–21	20–22	21–23	22–24	23–25	24–26
4. AFDC cost										
5. Food stamp cost										
6. Medicaid cost										
7. Social svs. & housing (7% of 4)										
8. Admin. cost (12% of 4 & 5)										
9. Admin. cost (5% of 6)										
10. Total (4–9)										
11. Probability of welfare	0.34	0.34	0.34	0.27	0.22	0.20	0.20	0.20	0.18	0.17
12. Total (11 × 10)										
13. Discount factor	1.00	0.96	0.92	0.89	0.85	0.82	0.78	0.75	0.72	0.69
14. Yearly full cost (12 × 13)										
15. Yearly potential savings (40% of 14)										

delayed until the mother was 20 or older—the so-called marginal costs of teenage childbearing. The savings—$5,560 for a single birth and $2.06 billion for the cohort—are only 40 percent of total cost, reflecting the fact that even with delayed births and a potentially smaller family size, many women are still likely to need welfare.

Calculating Public Costs

A sample worksheet for calculating single-birth costs is shown in Figure 1. The worksheet applies to the first 10 years only; two such worksheets would be needed to calculate 20-year costs. The example given here is for women 15–17 years of age. Separate worksheets must be completed for other age-groups.

The age of the mother at first birth is checked on line 1, and her age during each year of the projection is entered on line 3. AFDC, food stamp and Medicaid costs in 1985* should be adjusted for the 20 years of the projection, to accommodate their anticipated failure to keep pace with inflation.† The adjusted figures are then multiplied by the anticipated number of family members receiving benefits in each year, and the results entered on lines 4–6 for each year. Social services and housing costs (seven percent of AFDC cost) and administrative expenses (12 percent of AFDC and food stamps and five percent of Medicaid) are calculated next and entered on lines 7–9.[38]

Lines 4–9 are then totaled for each year after first birth. The total is adjusted for the probability that the woman is receiving AFDC (in this example, the probabilities have already been calculated according to the proportion of women at each age and have been entered on line 11), and then must be adjusted for the discount factor (entered on line 13). The result is the yearly cost for one birth. All figures on line 14 are added to arrive at the single-birth cost for a 10- or 20-year period. Multiplying either the yearly cost or the figure for the entire period by 40 percent produces the potential savings in that year or over the period of the projection.

Once a worksheet has been completed for a single teenager in each age-cohort (e.g., 14 and younger, 15–17 and 18–19), the cost for all teenagers in each cohort can be obtained by multiplying the single-birth cost by the number of first births to teenagers in that cohort for that year. The cost for all teenagers experiencing first births in that year is then the sum of the costs for each age-cohort.‡

Discussion

This article has reviewed 12 available studies that estimate public costs attributable to teenage childbearing. The studies use very different methodologies, and a primary purpose of this article has been to extract some basic principles for making such estimates. These principles serve as the basis for the national estimates presented, and they double as recommendations to local planners interested in making similar estimates for their own populations.

The final figures derived from any analysis of public costs will always depend on the assumptions made. The estimates will increase if one assumes more births, and more closely spaced ones, following the first birth; if one assumes a higher rate of welfare participation during each year of the projection; if one assumes that inflation is lower or that increases in government outlays relative to inflation are higher; if one limits the analysis to poor and marginal-income teenagers, who would be expected to have higher rates of welfare dependency than all teenagers; or if one includes additional categories of costs in the analysis.

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*The AFDC cost figure per recipient is $113 per month (see: Committee on Ways and Means, 1985, op. cit., Section 8, Table 17, reference 3). Figures for food stamps and Medicaid are given earlier in the text. Costs to Medicaid of pregnancy and childbirth are estimated at $3,107 for a birth to a teenager 14 and younger, $2,867 for a birth to a 15–17-year-old, $2,397 for one to an 18–19-year-old and $2,446 for a birth to a woman 20 and older.

†AFDC is reduced by 3.2 percent per year, based on the assumption that the annual inflation rate will be five percent, whereas the annual increase in AFDC will only be 1.8 percent (see: Committee on Ways and Means, 1985, op. cit., Section 8, Table 17, reference 3). Food stamp cost is reduced by three percent per year, based on the assumption of a five percent inflation rate and a two percent increase in the food stamp allotment per recipient. Medicaid expenditures are not adjusted, because the anticipated five percent inflation rate and five percent growth rate in Medicaid expenditures cancel each other out.

‡A manual that local authorities can use to assist them in calculating these costs has recently been published: M. R. Burt and D. Haffner, *Teenage Childbearing: How Much Does It Cost?* Center for Population Options, Washington, D.C., 1986.

What is critically important when developing estimates of this kind is to make the underlying assumptions clear, since so much rests on them. Clearly stated assumptions make it feasible to compare estimates derived from a number of different studies. In the national estimates presented in this article, for instance, 20-year projected costs are considerably lower than similar estimates made with data applicable to the years before 1982, because they incorporate the lower welfare participation rates that followed from 1981 legislative changes made in the eligibility for AFDC.

Estimates of public outlays for teenage childbearing often attract a great deal of attention in the media, at both the national and the local level. Such estimates are time-consuming but not difficult to calculate, and enough is known about how to make them that such figures should become readily available to policy-makers and program-planners throughout the United States.

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DIGEST

Risk Factors for Uterine Fibroids Same as Those For Endometrial Cancer, New Pill Study Finds

Women who use the pill are at reduced risk of developing uterine fibroids; the risk decreases with duration of pill use and possibly with the use of oral contraceptives high in progestogen. Two other factors protective against the growth of fibroids are smoking and an increasing number of term pregnancies. However, the risk rises with increasing body weight. All these factors are also associated—in the same directions—with a woman's risk of developing endometrial cancer. "Unopposed" estrogen—already identified as a major factor associated with the development of endometrial cancer—may also be associated with the development of uterine fibroids. These are the major findings of a recent analysis of data on uterine fibroids from the Oxford Family Planning Association study.[1]

About 17,000 women were recruited for the Oxford study between 1968 and 1974. At the time of recruitment, all of the women were married, were between the ages of 25 and 39, and were using oral contraceptives, the diaphragm or the IUD. As of July 1985, 538 women had developed uterine fibroids. Of these women, 535 entered the fibroid study as cases. The researchers selected an equal number of controls, who were matched with cases by date of entry into the study, age and family planning clinic attendance. Detailed reproductive histories, including information on pregnancies, abortions and contraceptive use were available for both cases and controls. These histories are updated annually.

Findings

The investigators found a steady rise in the incidence of fibroids with increasing age up to age 50. Fibroids were uncommon among women under the age of 30; they were three times more likely to occur among women in their 40s than among those in their 30s.

Menopause was associated with a considerably reduced risk of fibroids: Only three of the patients with fibroids were postmenopausal compared with 17 of the controls. This finding was consistent with a fall in the incidence of fibroids among women after the age of 50, according to the researchers.

A woman's risk of developing fibroids decreased with each term pregnancy (both live births and stillbirths). The investigators found that women with five term pregnancies ran only a quarter of the risk that women with no term pregnancies ran. In addition, they found that the older the woman at her last term pregnancy, the lower her risk of developing fibroids.

Women with fibroids were more likely to have had incomplete pregnancies than were women in the control group: Fifteen percent of all case pregnancies ended in spontaneous or induced abortion compared with 11 percent of all control pregnancies. Moreover, during follow-up it was discovered that there had been fewer pregnancies among the women with fibroids than among those in the control group.

A smaller proportion of women with fibroids than of the controls had used oral contraceptives (53 percent and 59 percent, respectively). Further, a woman's risk of developing fibroids declined consistently with increasing duration of pill use. The investigators found a roughly 17 percent reduction in risk with each five years of oral contraceptive use. Reduction in the risk of developing fibroids appeared to be associated with the amount of progestogen in the pill: The higher the dose of progestogen, the more protection it afforded.

The researchers found that both weight and cigarette smoking were also related to a woman's risk of developing fibroids. The risk increased steadily with increasing weight: Women who weighed more than 70 kilograms at the time of recruitment were three times more likely to develop fibroids than were those who weighed less than 50 kilograms. Conversely, the risk was lower among smokers than among nonsmokers: Women who smoked 10 cigarettes a day had an 18 percent decreased risk compared with nonsmokers.

The investigators believe that the negative association between the number of term pregnancies and the risk of fibroids is probably due to a combination of the relative infertility of women who develop fibroids and the possibility that term pregnancies per se reduce the risk. Their finding that the risk of fibroids is further reduced with each additional term pregnancy lends weight to the latter possibility, they contend. Moreover, because the pregnancies among the fibroid group ended in abortion more often than the pregnancies among controls, and because cases reported infertility problems more often during follow-up, the researchers conclude that fibroids may contribute to infertility by blocking implantation or by preventing maintenance of the ovum in the uterus in some cases.

All of the risk factors for uterine fibroids that have been identified in this study are the same as those identified for endometrial cancer, according to the researchers. They conclude that since "unopposed" estrogen—that is, exposure to estrogen unaccompanied by progestogen—is a major factor associated with endometrial cancer, it may also be an "underlying cause of fibroids." The decreased risk of fibroids associated with term pregnancies and with the use of oral contraceptives high in progestogen might possibly be explained by the estrogen-modifying effect of progestogens, they contend. However, the investigators underscore the need for future research to test this hypothesis by finding out whether fibroids are particularly prevalent among women with endometrial cancer and by determining why the use of estrogen replacement therapy by postmenopausal women does not appear to increase the risk of fibroids.

Reference

[1] R. Ross et al., "Risk Factors for Uterine Fibroids: Reduced Risk Associated with Oral Contraceptives," *British Medical Journal*, 293:359, 1986.

UK: Maternal Mortality Rate Is Low, but Many Deaths Are Preventable

Maternal mortality continues to decline in England and Wales. A recently released report containing data from 1979–1981 shows that there were seven maternal deaths per million women aged 15–44, compared with 14 per million between 1970 and 1972. Between 1979 and 1981, the most common direct cause of maternal mortality was hypertensive disease. Other important primary causes of maternal mortality were pulmonary embolism, anesthesia-related complications, ectopic pregnancy and amniotic fluid embolism. Overall, one in five deaths were related in some way to cesarean section, and around one in 20 were directly associated with spontaneous or induced abortion. Many of the deaths were attributed by the investigators to poor medical care; thus, while maternal mortality rates are lower than ever, a substantial proportion of maternal deaths remain preventable.[1]

British health authorities investigate each death that is either known or suspected to have been related to a woman's pregnancy. Special inquiry forms are dispatched to all medical staff involved in the woman's medical care, and senior consultant obstetricians forward this information to the Department of Health and Social Security. The reports are then evaluated and specific causes of death are attributed. These data have been collected and released for three-year periods, beginning with the period 1970–1972.

In the period 1979–1981, there were 299 maternal deaths that occurred either during pregnancy or in the 42 days following childbirth. Direct maternal deaths (i.e., those resulting directly from obstetric complications during pregnancy, labor and the postpartum period, or from omitted or incorrect medical treatment) represented 59 percent of maternal deaths, and indirect maternal deaths (those stemming from preexisting disease or from a disease that developed during pregnancy but was not directly related to it) accounted for 31 percent of pregnancy-related mortality. The remaining 10 percent were classified as being unrelated to pregnancy. Eighty-one percent of maternal deaths were among married women, and 26 percent of all deaths took place before 28 weeks of gestation.

There were seven maternal deaths for every million English and Welsh women of reproductive age in 1979–1981, approximately the same level as in the previous three-year period. However, this rate was substantially lower than that observed in 1970–1972, when there were about 14 maternal deaths for every million women aged 15–44.

The direct maternal mortality rate in 1979–1981 was 92 deaths per million women who gave birth. Levels of direct mortality were lowest among 20–24-year-olds (58 deaths per million) and highest among women 40 or older (544 deaths per million). The death rate climbed steadily with the woman's age, except that the rate among teenagers who gave birth (90 per million) was considerably higher than that found among 20–24-year-olds. With regard to parity, women having their second child had the lowest mortality rate (76 deaths per million), followed closely by those having their first birth (84 per million); beyond two births, rates of direct maternal mortality rose steadily by parity. The investigators estimate that almost 25 percent of the reduction in maternal deaths between 1970–1972 and 1979–1981 may be attributable to a decline in the fertility of women in England and Wales.

Causes of Death

Of the 176 women whose deaths were directly related to childbearing, 36 died as a result of hypertensive diseases of pregnancy (preeclampsia and eclampsia). These diseases were the single most important cause of death, especially among older women: Mortality from hypertensive diseases among those over age 35 was 50 deaths per million women who delivered, compared with 17 per million among those 35 or younger. Overall rates of maternal mortality from hypertensive diseases do not appear to have changed since 1970. The authors of the report attribute 75 percent of the deaths from hypertensive diseases to substandard medical care and comment that such levels of mortality are "particularly unsatisfactory," given the ability of modern obstetrics to prevent such deaths.

Embolisms were another important direct cause of maternal mortality: Twenty-three women died of pulmonary embolisms—11 while pregnant, one during labor and 11 after delivery. This was the lowest number of such fatalities since 1970. In addition, 18 deaths were attributed to amniotic fluid embolisms; in each of these cases, symptoms first appeared during labor. The report notes that at least three of the amniotic fluid embolisms were associated with uterine rupture following the administration of drugs to induce or augment labor, raising the possibility that "uterine contractions may have been more excessive than was appreciated or reported." The authors emphasize that such treatment should be closely supervised to ensure that uterine rupture and amniotic fluid embolism are avoided.

Twenty maternal deaths were the direct result of an ectopic pregnancy; the associated mortality rate was eight deaths per million pregnancies. The authors of the report comment that nonwhite women appear to be three to four times more likely to die from an ectopic pregnancy than are white women; of 170 deaths from ectopic pregnancy that have occurred in England and Wales since 1964, 52 have been among nonwhite women. Ectopic pregnancy was properly diagnosed in only seven of the 20 deaths in 1979–1981; in six cases, the diagnosis was delayed or the condition was misdiagnosed; and in the remaining seven cases, ectopic pregnancy was completely unsuspected. According to the authors, a high degree of suspicion on the part of health professionals and timely treatment are the only ways in which some of these deaths might be averted.

A total of 22 women died as a result of complications directly attributable to anesthesia: Ten deaths were from pulmonary complications, six were due to cardiac complications and six were related to central nervous system complications. According to the report, of the eight anesthesia-related deaths resulting from inhalation of the contents of the stomach, seven were attributable to substandard postoperative care. In eight deaths, the anesthesiologist intubated the patient incorrectly. The authors also point out that 11 of the women who died of anesthesia complications were nonwhite; it is suggested that medical staff did not react quickly enough to oxygen starvation among these women because the skin color changes characteristic of oxygen deprivation were harder to detect.

Fourteen women died as a direct result of abortions—six from spontaneous or missed abortions, five from legal abortions, one from an illegal abortion and two from abortions of unknown types. Between 1970 and 1972, the period immediately preceding the legalization of abortion in Great Britain, 71 maternal deaths were directly related to induced abortion, compared with only six in 1979–1982. Furthermore, illegal abortion deaths fell from 37 in 1970–1972 to one in 1979–1982.

Finally, of the remaining cases of direct maternal deaths, 14 women died of hemorrhage, six died of infection and 23 died of other causes (including uterine rupture and liver disorders).

Cesarean Sections

Although the mortality rate from cesarean section has fallen steadily, the procedure still was involved in a relatively large proportion of maternal deaths. In all, 87 women died either during or following a cesarean section—59 were direct maternal deaths, 25 were indirect and three were unrelated. The overall mortality rate for cesarean sections in 1979–1981 was 0.4 deaths per 1,000 operations, compared with 0.8 per 1,000 in 1970–1972. This decline occurred during a period in which the proportion of cesarean sections that were actually performed rose from five percent to nine percent of all deliveries.

As might have been expected, the mortality rate for emergency cesarean sections was four times higher than the rate for elective procedures (0.8 compared with 0.2 deaths per 1,000 operations). Seventy percent of the deaths occurred following emergency procedures. The report suggests that hospitals should have better procedures for preparing patients for cesareans on short notice and should encourage closer consultation between obstetricians, anesthetists and midwives in high-risk cases. "In many instances," the authors comment, "the decision to perform a cesarean section appears to have been taken too late."

Type of Care

A total of 41 women who died during the three-year period had made no pregnancy-related medical visits. In 26 of these cases, either the duration of the pregnancy was unknown or the woman died in the first 12 weeks of pregnancy (which makes their failure to seek care understandable). Four other women died during the course of legal or spontaneous abortions. Of the remaining 11 women, eight died as a direct result of pregnancy-related hypertensive disease; six of these eight women had concealed their pregnancies. The other three women died of hemorrhage; each of these women had given birth at home, unattended. According to the authors, this finding "clearly illustrates the great hazards both of hypertensive disease and of pregnancy concealment for women who made no arrangement for their [delivery]."

The authors of the report conclude that the risk of maternal mortality has been greatly reduced in England and Wales during the past 20 years. The factors that at one time were the principal causes of death—hemorrhage and abortion—now represent only about 16 percent of all maternal deaths. However, they conclude, many of the deaths examined could have been prevented if doctors and hospitals had provided better medical care.

Reference

1. A. C. Turnbull et al., *Report on Confidential Enquiries into Maternal Deaths in England and Wales, 1979–1981*, Department of Health and Social Security, Report on Health and Social Subjects No. 29, London, 1986.

The Effectiveness of the Cervical Cap Is Hampered By Problems of Dislodgement and Rubber Erosion

A group of well-educated Toronto women using the cervical cap registered pregnancy rates of 17 percent at the end of one year of use and 38 percent at the end of two years, according to a recent study.[1] Failure of the method was related to dislodgement of the cap during sexual intercourse. Caps used consistently for a year or repeatedly left in place for longer than three days evidenced marked deterioration, which may also have increased the risk of pregnancy. The investigators suggest that this risk might be reduced if the manufacturer improves the cap's durability and fit by using better materials and increasing the number of sizes available.

Between May 1981 and November 1983, 617 women attending the Bay Center for Birth Control in Toronto volunteered to be fitted with a cervical cap. Of the original participants, 101 were lost to follow-up and were excluded from the analysis. The study sample consisted, therefore, of 516 women, 438 of whom returned to the center for at least one recommended checkup, and 78 of whom responded to a mailed questionnaire. Most of the participants were from Toronto and its environs. Their mean age was 29, making them several years older than the center's average client; only three percent had not finished high school, and more than half had completed some sort of postsecondary training. Forty-five percent of the women had been pregnant at least once before being fitted with the cap. (Women in the study had used an average of three other contraceptive methods before the cap: 91 percent, the pill; 54 percent, the diaphragm; and 51 percent, the IUD.)

At the outset, 98 percent of the women were provided with the Prentif cavity-rim cap, and the other two percent were fitted with the Vimule cap. However, use of the Vimule cap was discontinued when the results of a California study showed that its design caused a buildup of cervical tissue and, in some cases, lacerations.

Trained personnel fitted all of the volunteers with the cap and provided detailed guidelines on its use: Women were instructed to keep the cap in place at least eight hours after intercourse, but no longer than three days; to fill the cap one-third to one-half full with a spermicide prior to each insertion; to use a backup method for the first month of intercourse; to have the cap refitted after a pregnancy; to wash the cap on removal; and to soak it in a diluted solution of vinegar, lemon juice or alcohol if odor became a problem.

Findings

Life-table analysis revealed failure rates of 17 percent after one year of use and 38 percent after two years. Of 62 women who became pregnant and provided data on consistency of cap use, 71 percent said they had used the cap at every act of sexual intercourse. Of 57 women who conceived and supplied data on dislodgement, 60 percent said the cap had not dislodged during intercourse. And of 48 women who became pregnant and who provided information about their use of spermicides, 88 percent said they had used them consistently. Method failure accounted for approximately one-quarter of the unplanned pregnancies that occurred among the 48 women who reported consistent use of both the cap and spermicides and who reported no dislodgement during intercourse.

The investigators found that women who became pregnant were more likely to have had problems with dislodgement than women who did not become pregnant (40 percent of pregnant women reported cap dislodgement compared with 32 percent of all the study participants).

Of the 438 women who returned to the center for a checkup, 33 were found to have developed abnormalities of the cervix, including erosion (five cases), signs of trauma (five), cervical tears (two), and ulceration of cervical tissue (one case, resulting from use of the Vimule cap). There were no reported instances of toxic shock.

The most common problem associated with cervical cap use was odor (33 percent), followed closely by dislodgement (32 percent). In addition, 22 percent of women said they had experienced discomfort, 19 percent had had difficulty inserting or removing the cap, 15 percent had had an unusual vaginal discharge, 13 percent said their partners had experienced discomfort from the cap, and 12 percent had suffered from intermenstrual bleeding.

Four out of 10 women who stopped using the cap did so because they decided to change to another method of contraception;

Four percent chose sterilization, 20 percent began taking the pill, 6 percent had an IUD inserted, and 10 percent turned to other barrier methods.

Implications

Because most of the study participants reported adherence to the guidelines outlined by the clinic staff, the investigators conclude that the pregnancy rate of 17 percent after one year was due in large part to method failure, rather than user failure. Whereas the pregnancy rate of users would theoretically have been expected to diminish as women became used to the cervical cap or as they withdrew from the study, the proportion of women who became pregnant during each interval actually remained fairly constant. The investigators believe that this finding may be attributable to the deterioration of cervical caps that were used consistently for more than six months. In fact, all caps that were used consistently for a year and those repeatedly left in place for longer than three days were found to have deteriorated to a greater degree than those used for shorter periods. The researchers believe that such deterioration may have affected the quality of fit and thereby increased the risk of pregnancy. For these reasons, the center staff now recommends that caps be left in place for no more than 24 hours at a time and that they be checked every six months, until such time as the materials used in their manufacture are improved.

Although the researchers found that most women expressed a high degree of satisfaction with the cap, they believe that close attention should be paid to users' complaints. Since dislodgement from the cervix is associated with a higher incidence of unplanned pregnancy, the investigators suggest that the Prentif cap be produced in a wider range of sizes than the four that are currently available. Better fit would improve the cap's efficacy and would allow more women to use it without fear of dislodgement, they claim.

The recommendation for reducing odor by cleaning the cap in a solution of diluted vinegar, lemon juice or alcohol proved unsuccessful. These agents may, in fact, cause the rubber to deteriorate. The researchers now recommend use of a detergent high in phosphate and low in sulphate for cleaning purposes, but they nevertheless believe that the long-range solution to the odor problem lies in improving the materials used in the cap.

Since the majority of all study participants—both those who did and those who did not experience method failure—reported using spermicides consistently, the investigators question the necessity of using such substances at all in conjunction with the cap. They suggest further research to determine how much the cap's effectiveness is enhanced by spermicide use and how long the spermicide remains active.

Reference

1. M. G. Powell et al., "Contraception with the Cervical Cap: Effectiveness, Safety, Continuity of Use, and User Satisfaction," *Contraception*, 33:215, 1986.

Premarital Sexual Intercourse Far More Common Among Scottish Teens Today Than 20 Years Ago

Today's Scottish teenagers are much more likely to engage in premarital intercourse than were adolescents two or three decades ago, although they remain less likely to do so than are their English or Welsh counterparts. According to the results of a recent survey, only six percent of Scottish women born between 1926 and 1930 had premarital intercourse while they were teenagers, compared with 50 percent of those born between 1951 and 1955 and 61 percent of the 1961–1965 cohort. In addition, modern teenagers are less likely to marry than were their recent predecessors. Thus, the length of time during which a Scottish teenager is at risk of having a premarital conception has increased recently. Nevertheless, the probability that Scottish teenagers will become pregnant premaritally appears to have fallen, most likely as a result of high levels of contraceptive use among those who are sexually active.[1]

The survey was conducted by the Office of Population Censuses and Surveys, on behalf of the Scottish Home and Health Department, in 1985. A total of 3,400 women aged 16–54 were selected randomly and interviewed concerning their experience of premarital sexual intercourse, conception and contraceptive use as teenagers.

Overall, in each year of the 1950s, about 2–3 percent of unmarried 15–19-year-olds ever had intercourse; in 1964, this proportion was seven percent, and it climbed to over 20 percent in 1981. (Overall levels of premarital teenage sexual experience are lower in Scotland than in Great Britain as a whole: For example, in 1976, 37 percent of all unmarried British teenagers had had intercourse, compared with only 17 percent of single Scottish teenagers.)

An analysis using life tables to determine cohort levels of sexual experience indicates that 50 percent of women born between 1951 and 1955 had premarital intercourse during adolescence, as did 61 percent of women born in the period 1961–1965. However, the author of the survey report comments, despite claims that teenage sexual activity increased only after family planning services became available to single women (in 1968), and especially after such services were made available free of charge through the National Health Service (in 1975), "there were striking increases in teenage intercourse among single girls long before the development of the family planning services and even before the pill became available." For example, she points out that the proportion of young single women who ever had intercourse jumped from six percent of those born between 1926 and 1930 to 16 percent of those born between 1931 and 1935, and to 23 percent of those born in the period 1941–1945.

Until the mid-1950s, the increases in teenage sexual activity were accompanied by increases in the proportion of adolescents who were married. This proportion climbed from 16 percent of women born between 1926 and 1930 to about 29 percent of those born in the period 1941–1950 and 34 percent of those born in 1951–1955. However, among later cohorts, teenage marriage has become less common: Twenty-nine percent of women born in the period 1956–1960 and 22 percent of those born between 1961 and 1965 married as teenagers.

In addition, among women who ever had premarital intercourse as teenagers, anywhere from 33 to 41 percent of those born before 1951 married within nine months of first intercourse. In contrast, this proportion was only 28 percent among women born between 1951 and 1955, and just 19 percent among those born in the period 1956–1960. The author suggests that when single women became more likely to enter into sexual relationships, in the 1950s and 1960s, "it was often because couples anticipated marriage in the relatively near future. . . . In the later 1960s and [the] 1970s, however, the connection between premarital intercourse and the timing of marriage seems to have become more tenuous."

As a result of these trends, the time spent by teenagers at risk of a premarital conception increased substantially in recent years. The author estimates that the median length of time teenagers were at risk of premarital conception rose from around 15 months among women born before 1951 to 27 months for those born between 1956 and 1960. The probability of a teenager's having a premarital pregnancy also rose, from six percent among women born in the period 1926–1930 to 21 percent among those born in 1951–1955.

Thereafter, however, the proportion of teenagers conceiving before marriage began to decline, reaching a level of just 10 percent among women born between 1961 and 1965. Thus, the likelihood of premarital pregnancy in the teenage years was almost as low for women born between 1961 and 1965 as it was for those born between 1926 and 1930, even though the latter group was much less likely than the former to have sexual intercourse as adolescents. The investigator points out that the apparent decrease in recent years might have been due to an underreporting of abortions, although a similar trend in premarital conceptions has been observed for England and Wales.

The decline in premarital pregnancies in the face of increased sexual activity suggests, therefore, that younger Scottish women have adopted contraception in large numbers. Indeed, the data show that while only 18 percent of the women born between 1946 and 1950 used the pill while they were unmarried teenagers, fully 40 percent of those born in the period 1951–1955 did so. The proportion of women who had unprotected first intercourse while single rose steadily, from five percent of those born between 1926 and 1930 to 25 percent of those born in the period 1946–1950; however, among later cohorts, the proportion who had unprotected first intercourse remained virtually unchanged, despite the fact that overall rates of adolescent premarital intercourse increased from 36 percent to 61 percent.

At the time of the survey, only three percent of single teenage women who had had intercourse in the previous 12 months had not used some contraceptive method at last intercourse. Indeed, a rising proportion of young women reported that they had obtained a method of birth control prior to first intercourse. Among women born between 1941 and 1945, nine percent reported having been prepared before first intercourse, compared with 36 percent of women born in the period 1951–1955 and 41 percent of those born in 1956–1960.

Reference

1. M. Bone, "Trends in Single Women's Sexual Behavior in Scotland," *Population Trends*, No. 43, Spring 1986, p. 7.

Abortions as Currently Performed Do Not Appear To Increase the Risk of Subsequent Miscarriage

Women who have had one induced abortion are not at increased risk of subsequent miscarriage. However, there is an association between multiple abortions performed prior to 1973 and an increased risk of miscarriage. This increased risk is possibly attributable to adverse effects resulting from the methods generally used to terminate pregnancies before 1973, when abortion was legalized. Abortions induced by the procedures now most widely in use are not likely to increase a woman's risk of miscarriage in future pregnancies. These are some of the findings of a case-control study conducted in three New York City hospitals between April 1974 and November 1982.[1]

The case group was drawn from among 6,339 women hospitalized for treatment of miscarriage in the public and private wings of the hospitals. Determination of the karyotype of the miscarried fetus was possible for 1,298 women, of whom nearly 30 percent were private patients and 70 percent, public. The control group, also divided into public and private patients, consisted of women who registered for prenatal care at the same three medical centers and gave birth at 28 weeks' gestation, or later. Data were collected on several factors thought to be associated with a history of induced abortion or miscarriage, including age, cigarette smoking, prior miscarriage, ethnicity, gravidity and parity.

The investigators examined the relationship between the karyotype of the miscarried fetus and the woman's history of induced abortion. They hypothesized that if induced abortions increased the risk of subsequent miscarriage, only pregnancies involving chromosomally normal fetuses would be affected because the mechanics of the procedure would not be likely to modify the genetic composition of the fetus and thus would not contribute to a woman's risk of carrying a chromosomally abnormal fetus. Odds ratios were computed to determine if women who miscarried were more likely to have had a history of induced abortion than were women who gave birth. The researchers sought to ascertain whether there was an association between multiple abortions and miscarriage; whether that association might vary with the woman's age and obstetric history at the time of her first abortion; and whether the gestational age of the fetus at termination, the abortion procedure used and the year in which it was carried out (pre- or post-1973) had a bearing on the association.

As the investigators had expected, neither single nor multiple induced abortions had any effect on a woman's likelihood of carrying an abnormal fetus, among either public or private patients. Further, the risk of miscarriage of a normal fetus was no greater for women who had had a single induced abortion than for those who had not. In the analysis of one versus no induced abortions, the odds ratios comparing cases with controls were close to one for both public and private patients (0.9 and 1.2, respectively). The lack of association between a single induced abortion and miscarriage of a normal fetus persisted even after the researchers controlled for the possible confounding variables.

When the investigators examined the relationship between multiple induced abortions and subsequent miscarriages of normal fetuses, they found some differences between private and public patients. Among public patients, a history of two or more abortions did not increase the risk of a subsequent miscarriage: The odds ratio remained close to one, regardless of the number of abortions performed, even when adjusted for such characteristics as the woman's age, ethnicity and year of recruitment into the study. Similarly, when the researchers adjusted for the timing of induced abortions, they found that the odds ratio stayed close to one when only the first of the multiple abortions occurred before 1973. However, when two or more of the abortions occurred before 1973, the odds ratio rose to 2.6.

Unlike public patients, private patients who miscarried a normal fetus were more than twice as likely as controls to have had two or more induced abortions. Such patients differed from controls in three other ways: They were more likely to have had their first induced abortion before 1973; somewhat more likely to have had that abortion done by methods other than suction curettage; and more likely to have been under the age of 20 when they had their first abortion. The fact that only a very small number of private patients reported multiple induced abortions made it difficult for the researchers to determine the relative importance of these three factors. Nevertheless, they believe that a first induced abortion obtained before 1973 is a more likely risk factor for subsequent miscarriage than is either the woman's age at first abortion or the method of induction used. Indeed, private cases were more than three times as likely as controls to have a history of multiple abortions in which the first occurred before 1973 (OR=3.4).

The researchers conclude that their findings are consistent with the theory that some miscarriages of normal fetuses may have a mechanical origin. They note that the induction techniques used before the legalization of abortion may have been more likely to cause cervical trauma than were methods used later. Further, they suggest that the difference in their findings for public and private patients may be due to the possibility that private patients were more likely to have had their abortions performed in a private physician's office than in a clinic. Since new abortion techniques were first and most widely used in clinics, private patients may not have benefited from them as early as or to the same degree as public patients, according to the researchers. In any case, their findings provide no evidence to suggest that multiple abortions performed after the mid-1970s increase a woman's risk of subsequent miscarriage.

Reference

1. J. Kline et al., "Induced Abortion and the Chromosomal Characteristics of Subsequent Miscarriages (Spontaneous Abortions)," *American Journal of Epidemiology*, **123**:1066, 1986.

Wide State and Regional Variations in Both Cost And Rate of C-Sections

American women pay over $4,000, on average, for a cesarean delivery, but there is a considerable amount of regional and state variation in this figure, as well as in the proportion of deliveries performed by cesarean section and in the length of hospitalization for the procedure. These differences are the subject of a study on the cost of cesarean deliveries conducted by the Metropolitan Life Insurance Company.[1]

The study examined insurance claims for 8,636 women aged 15–44 whose cesarean deliveries were covered by Metropolitan Life's group health contracts between January 1982 and June 1983. The average cost (including medical and surgical expenses and hospital charges) was analyzed by state and region. The analysis was restricted to 34 states in which 50 or more cesarean sections were performed; these data represent 95 percent of the cases reported to Metropolitan Life.

Findings

The investigator reports that 43 percent of all cesarean deliveries in the United States in 1982–1983 were performed in the South, compared with 22 percent in the Midwest, 18 percent in the Northeast and 17 percent in the West. Further, she cites references showing that the proportion of births delivered by cesarean section was higher in cities than in rural areas, even after controlling for the mother's age and the baby's birth weight. The researcher uncovers no evidence, however, to support the theory that differences in cesarean birthrates might have been due to variations in the geographic distribution of high-risk populations.

There were also variations in the total cost of the operation (hospital charges plus physician fees). The national average cost was $4,130 in 1982–1983, with charges in the four main regions ranging from a high of $4,550 in the West to a low of $3,780 in the South. Furthermore, three subregions reported charges in excess of the national average: These were the Pacific region ($4,990), the Middle Atlantic region ($4,690), and the East North Central region ($4,430). Two-thirds of the geographic areas reported costs below the national norm—an indication of the extent to which charges in the highest-cost regions skewed the average.

Among the states, total charges for a cesarean birth differed by as much as 82 percent. The District of Columbia reported the highest total charge ($5,350), followed closely by California, Illinois and New York. The lowest charge was reported in Utah ($2,940).

Physician and hospital charges (including room and board and ancillary fees) also varied by region and state. On average, hospital charges represented close to 70 percent of the total insurance bill for a cesarean birth; the proportion ranged from 77 percent in Michigan and Missouri to 64 percent in Maryland and California. The average physician fee was $1,270 nationally; the highest fees were charged in California ($1,890) and New York ($1,780). By contrast, Iowa physicians charged only $910, 28 percent below the national average.

The average length of hospital stay for a cesarean section was 6.0 days. However, women in New York had a much longer stay (8.7 days), which was 45 percent above the national mean. The researcher found that the length of hospital stay was not necessarily related to the costs, however. For example, in California, where total and component charges were among the highest in the country, the length of stay was only 5.1 days, or 15 percent below the national average.

The author of a commentary accompanying the study[2] points out that the rate of cesarean deliveries increased to 21.1 per 100 deliveries in 1984 and is increasing in all regions of the United States, among women of all age-groups, marital statuses and racial groups, and in all types and sizes of hospitals. Unpublished tabulations from the National Hospital Discharge Survey released by the National Center for Health Statistics reveal that the cesarean rate rose again in 1985, to 22.7 per 100 deliveries. In addition, the rate of cesarean births is higher among women covered by private health insurance than among women who are cared for under government programs or who lack insurance. The author points out that obstetricians frequently mention the fear of malpractice lawsuits over negative birth outcomes and the practice of defensive medicine as being partly responsible for the rising rate of cesarean deliveries. The commentator joins the investigator in calling for increased education of consumers and providers about the medical feasibility of vaginal birth after a cesarean delivery. Ending the routine practice of performing repeat cesareans, the commentator believes, could lead to a reduction in cesarean birthrates and, consequently, to lower costs.

References

1. Metropolitan Life Insurance Company, "Costs for Cesarean Section: Regional Variations," *Statistical Bulletin*, Vol. 67, No. 3, 1986, p. 2.

2. P. Placek, "Commentary: Cesarean Rate Still Rising," *Statistical Bulletin*, Vol. 67, No. 3, 1986, p. 9.

Well-Trained Physician Assistants Can Perform Early Abortions Safely

Well-trained physician assistants are found to perform first-trimester abortions as safely as physicians, when outcomes are measured in terms of complication rates. A two-year prospective study conducted at the Vermont Women's Health Center revealed no significant differences in overall, immediate or delayed complication rates between women whose first-trimester abortions were performed by physician assistants and those whose abortions were performed by physicians.[1] Although a number of studies have shown that physicians can provide first-trimester abortions safely in an outpatient setting, this study represents the first evaluation of the performance of physician assistants relative to the results achieved by medical practitioners.

The study sample consisted of all women who obtained a first-trimester abortion at the Vermont Women's Health Center between January 1, 1981, and December 31, 1982. During that period, a total of 2,458 pregnancy terminations were included in the study: 1,285 were performed by physician assistants and 1,173, by physicians. There was no differential allocation of patients to physicians or to physician assistants: Patients were seen by whichever provider was available in the clinic. In general, the study group was representative of the population of women seeking abortions in Vermont. The majority were white (98 percent), single (77 percent) and under 25 years of age (71 percent). Fifty-four percent were pregnant for the first time, and 68 percent had had no previous abortions.

The clinic used only two abortion methods, both under local anesthesia: early uterine evacuation and suction curettage. Clinic protocol required that early uterine evacuation be performed no later than eight weeks following the patient's last menstrual period, provided this criterion was consistent with uterine size as determined by pelvic examination.

Patient participation in the study was voluntary. At discharge from the center, women were instructed to return to the clinic for a checkup or to see their own doctor within four weeks. Those who elected to see their personal physician were given a questionnaire dealing with possible delayed complications, to be filled out by the private physician and returned to the clinic for analysis. Immediate complications were defined as those evident before discharge; delayed, as those noted any time within the four-week postabortion period.

The overall complication rate associated with abortions performed by physician assistants was 27 per 1,000 procedures, compared with a rate of 31 per 1,000 following those carried out by doctors. The immediate complication rates were five per 1,000 procedures performed by physician assistants and eight per 1,000 in the comparison group. Delayed complication rates were 23 and 24 per 1,000 abortions for physician assistants and for physicians, respectively. The researchers attribute the fact that the delayed complication rate was over twice that reported in a previous study to the aggressive follow-up that was carried out in the Women's Health Center study.

Type of abortion procedure was the only variable that significantly affected the total complication rate. The authors found a higher total complication rate associated with abortions performed by early uterine evacuation (39 per 1,000 procedures) than with those carried out by suction curettage (23 per 1,000). They further discovered that the total complication rate among women who had an early uterine evacuation at 7–8 weeks' gestation (49 per 1,000) was substantially higher than the rate among those whose abortions were performed at less than seven weeks' gestation (five per 1,000). (In response to this finding, according to the investigators, the center altered its protocols for uterine evacuation procedures.) Early uterine evacuation was associated with an increased number of delayed complications such as uterine hemorrhage and retained products of conception, and this relationship was independent of practitioner category.

Physician assistants have been providing pregnancy terminations in Vermont since 1975. They perform more than 20 percent of the 3,500 abortions that are done yearly in the state. The absence of differential complication rates following abortions performed by physicians and those performed by physician assistants could have significant implications for the future involvement of physician assistants in the provision of abortions, according to the authors. However, they caution that because of the clinic's rigorous apprenticeship system for trainee assistants and the unique homogeneity of the population served at the Vermont Women's Health Center, it may be inappropriate to generalize their conclusions to other abortion programs.

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Few Private MDs Ask Teenage Patients About Their Sexual Activity

Few private doctors giving routine physical examinations to adolescents ask their patients—especially their male patients—whether they are sexually active. As a result, one potentially important aspect of adolescent health care is probably neglected by many doctors. This is the major conclusion of a study designed to assess whether private physicians caring for healthy young people are observing the guidelines on reproductive care issued by the American Academy of Pediatrics.[1]

The investigator, a Massachusetts pediatrician, interviewed 244 young people coming to her office for a routine health checkup. In addition to demographic and health data, she obtained information about the adolescents' sexual activity and previous health check-ups. The teenagers were predominantly white (86 percent) and female (81 percent), ranging in age from 13 to 18.

Although 75 percent of those sampled said they had received a complete physical examination within the two years preceding the interview, only 23 percent of those who were currently sexually active had had a physical since initiating such activity. Among the 13–14-year-olds, 12 percent of the girls and 20 percent of the boys said they had had sexual intercourse. Among the 15–17-year-olds, these proportions rose to 33 percent for the girls and 35 percent for the boys.

Only 22 percent of the girls and four percent of the boys said their doctors had ever asked them about their sexual activity. Among the teenagers who were sexually active at the time of the interview, 62 percent said they had never been asked about their sexual activity. Of the girls who were sexually active, only one in four had seen a doctor since becoming sexually active; most girls had seen a gynecologist.

According to the investigator, the American Academy of Pediatrics recommends that from the age of 12, healthy adolescents should see a doctor every two years for a routine check-up, and that at those visits, doctors should ask their patients if they are sexually active. The researcher concludes that these guidelines are not being followed. She hypothesizes that sexual activity among boys is not seen by doctors as involving any health risk, which may explain why boys are questioned so much less frequently than girls are on this matter. Alternatively, she suggests, doctors may be embarrassed or not well trained to respond to male sexual activity. In addition, physicians may believe that their own patients are not sexually active, may not want to get involved, may not know what to do with the information, or may fear antagonizing the teenager and the teenager's parents. She claims that in order to make an adequate assessment of sexual activity among their adolescent patients, doctors might have to alter their style of practice by keeping parents out of the examination room and by "informing teenagers of their right to confidentiality."

In a final recommendation, the investigator suggets that a complete physical examination for healthy adolescents could be scheduled every two years, and the alternate year, a discussion visit could be arranged. This would provide doctors with an opportunity to delve more deeply into potential problem areas for teenagers.

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Credits
Cover design and illustration by Mark Kellogg.

Comment

Population Decline: A Threat to the West?

By C. Alison McIntosh and Barbara B. Crane

A new specter is haunting the land—depopulation. Some conservative policy analysts fear that if fertility rates in the United States and Europe remain as low as they currently are, the security of the West may be jeopardized and its cultural influence undermined. In recent months, this message has been widely communicated in the popular press, in large part thanks to a symposium held in December 1985 by the American Enterprise Institute for Public Policy Research (AEI). Ben J. Wattenberg and Karl Zinsmeister of AEI prepared a discussion paper for the symposium;[1] in an article based on that paper, they wrote that "the geopolitical security and potency of America and its Western allies are likely to be threatened by a variety of population trends now under way around the world. . . . Today, every major nation that is both modern and free is also on a fertility track that, unless changed, will lead to a substantial loss in population."[2] At the meeting, a group of experts ranging from Defense Department and State Department analysts to university scholars* responded to the findings of the Wattenberg–Zinsmeister analysis and to another paper by economist Allen Kelley.[3] In this article, we comment on some of the issues raised in those papers and in the discussion that followed.[4]

Current fears of depopulation in the West evoke a strong sense of déjà vu. "Strategic demography," a term used in a new book to denote ideologically inspired demographic analysis,[5] was an important component of mercantilist thinking as the emerging nation-states of Western Europe jockeyed for political and military advantage in the 16th and 17th centuries. An even closer parallel may be drawn with the fears of European nations during the tense period between the closing years of the 19th century and the end of the Second World War.

At that time, no European state was entirely free of anxiety over the possibility of falling behind in the population race. In France, however, such fears reached the level of a national paranoia. The French defeat at the hands of Prussia in 1870 triggered panic-stricken comparisons with the glorious days under Napolean, when France was the most populous nation in Europe. (Russia actually had a larger population, but in the early 19th century was too underdeveloped to be compared with France.) ***Dénatalité*** came to be regarded as a symptom of national degeneration, to which was attributed all of France's misfortunes, actual or anticipated.[6] But, according to the authors of a recent study of such concerns, "in all these counsels of gloom, we can observe . . . the tendency to presume, rather than to prove, the causal link between demographic and military or political change." It is understandable, the authors observe, that before warfare was fully mechanized, military strength should be equated with superiority of numbers, but it is less defensible now to reduce "major and complex questions of international politics to . . . mere reflections of vital statistics."[7] Precisely this sort of reductionism characterizes many of today's arguments.

The consequences of zero or negative growth are not well understood, and it is entirely appropriate that they should be examined further. The prospects for continued economic growth, as well as the social and political problems arising from the increasing number and proportion of elderly people in Western societies, have already claimed increasing scholarly attention.[8] By comparison, the geopolitical and strategic implications of declining population growth have been neglected. To the extent that the current discussion in the United States attempts to fill this gap, it is welcome. Nevertheless, we believe that the arguments currently circulating are alarmist and rest on poorly justified assumptions.

Strategic Demography

In their paper for the AEI, Wattenberg and Zinsmeister base their concerns on comparative population projections made for three world regions: the West (including North America, Western Europe, Australia, New Zealand and Japan), the Soviet bloc (the Union of Soviet Socialist Republics and Eastern Europe) and the less-developed countries. They observe that if current birthrates continue, the population of the Western community will grow another 8–9 percent, but after 2020, the population will begin to shrink, possibly reaching two-thirds of its present size by 2150.[9] In the process, the substantial population advantage currently enjoyed by the West over the Soviet bloc will be eroded. Meanwhile, the nations of the developing world will continue to grow rapidly.

Wattenberg and Zinsmeister tend to present these projections as forecasts, the implications of which they assume to be almost inevitable. Demographers, who have been proved wrong more often than is comfortable, are much more cautious in their use of projections, recognizing that these are no more than the mechanical working out of a set of assumptions. Even if the projected trends prove to be correct, the pace of change will be far slower than the reader is

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*Participants were Samuel Baum, U.S. Bureau of the Census; Bob Clark, North Carolina State University; Ray Cline, Georgetown University; Allan C. Carlson, The Rockford Institute; Nick Eberstadt, AEI; Murray Feshbach, Georgetown University; Gordon Green, U.S. Bureau of the Census; Richard Grenier, *The Washington Times* and *Commentary*; Edward Luttwak, independent consultant; Richard Perle, U.S. Department of Defense; John Lenszowski, National Security Council; C. Alison McIntosh, University of Michigan; Geoffrey McNicoll, The Population Council; Michael Novak, AEI; Michael Teitelbaum, Alfred P. Sloan Foundation; and Etienne van de Walle, University of Pennsylvania.

led to believe. The projections themselves indicate that it will be almost 150 years before the population of the Soviet bloc comes to equal and then surpass that of the West (see Figure 1)—plenty of time, one might think, for major changes to take place both in the components of population growth and in international relations. Furthermore, the West is already vastly outnumbered by the populations of Third World countries, and there is little that can be done to change the numerical balance. Although the importance of differences in population size cannot be entirely discounted, changes in Western fertility and population growth rates are unlikely to play a significant role in the West's relations with this heterogeneous group of nations.

There also is misunderstanding about the implications of changes in fertility rates for population size and growth. Replacement-level fertility (an average of 2.11 children per woman, given today's low mortality) is sometimes interpreted as an absolute line of demarcation between population growth and decline; very small fluctuations in either direction are seen as cause for relief or alarm. Instead, since real populations seldom display perfect stability in their demographic rates, but rather tend to fluctuate up and down from year to year, it is more realistic to think of a small range of fertility rates on either side of 2.1 as generally denoting zero population growth.

It is worth noting, therefore, that while some European nations on both sides of the East-West border have total fertility rates (TFRs) of around 1.3 or 1.4, which might justifiably cause some concern, TFRs in many of the other major industrialized nations, including the United States, have remained relatively constant at around 1.8 or 1.9 for almost a decade. Rates such as these imply a very slow decline that leaves plenty of time for adaptation or change. Further, Australia, Canada, New Zealand and the United States still have several decades of population growth ahead of them because of the demographic momentum inherent in the age-structure of their populations—a result of the extended postwar baby boom in these countries.

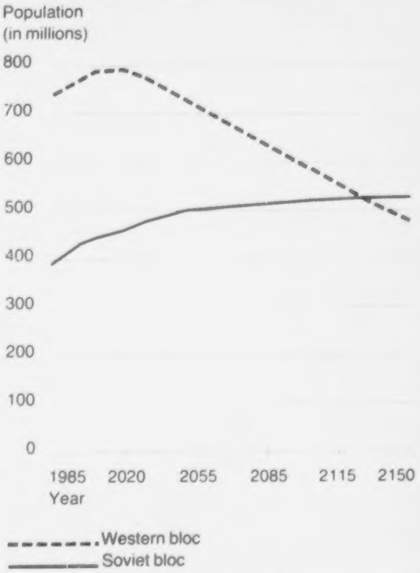
In addition, TFRs seldom reflect accurately the completed fertility of any group of real women. The calculation of true completed fertility (cohort rates) requires that demographers wait until the women born in a specific year have passed through their reproductive span (in developed countries, from about age 15 to age 44). Instead, the most commonly calculated TFR, known as a period rate, represents the fertility of a synthetic cohort of women; this rate is constructed by combining the fertility of women in all age-groups from 15 to 44, in a given calendar year. In times like the present, when patterns of childbearing are in a state of flux, period rates often give a false picture of the underlying fertility of real women. As happened in the 1930s, projections based on such rates may turn out to be very misleading.

Finally, the very long-term projections used by Wattenberg and Zinsmeister are fundamentally meaningless, because the range of uncertainty with regard to fertility rates over the next 100 years is very large. On examining changes in the patterns of family formation, some theorists can see nothing that might signal a return of higher fertility in the near future;[10] others envisage an upturn within the next decade.[11] Similarly, we cannot foretell the future of mortality rates, although these are now so low in developed countries that future changes are unlikely to have much effect on population growth. Moreover, United Nations estimates suggest that the Soviet Union's crude death rate, which is somewhat higher than that of most Western countries, may be leveling off.[12] To the extent, therefore, that mortality levels may influence population growth, they would appear to confer at least a minor advantage on the West.

Population and International Power

Concerns about declining Western influence depend in large measure on assumptions about how population size and growth affect political and military power. In times past, conventional armies were an important element of national power, and the number of foot soldiers that could be recruited was closely associated with population size. In today's more complex world, population size is still considered an element of power, but certainly no linear relationship exists between population growth rates and increasing or decreasing national power. Many additional variables have to be factored into the security equation. Today, levels of economic development, availability of natural resources, the education and morale of the people, the stability and legitimacy of government, the quality and moral reputation of leadership, and the capacity to form and maintain alliances are all thought to be important components of national power.[13] Some have argued that population size will again become critical once levels of development in the Third World more nearly approach those of the currently industrialized countries;[14] however, this prospect now seems much farther off than it was when the argument was first made.

Figure 1. Projected population of countries in the Western bloc* and in the Soviet bloc,† 1985–2150



*The Western bloc consists of North America, Western Europe, Australia, New Zealand and Japan.

†The Soviet bloc consists of Eastern Europe and the Soviet Union.

Source: See reference 2, p. 24.

Moreover, assessments of power cannot be separated from the objectives of nations, the arenas of action and the issues at hand. The relative population size of nations and other population-related measures of power, such as gross national product and size of conventional military forces, had little to do with the outcome of the conflict in Vietnam or, more recently, with struggles for control over the energy markets of the world, with efforts to limit nuclear arms and to curb terrorism, or with negotiations to bring peace to Central America.

Much of the discussion of population size, power and international security still focuses on the question of maintaining adequate levels of conventional armed forces. Recruiting military manpower is a troublesome problem for Western nations, but levels of recruitment for the alliance as a whole are likely to be significantly affected by demographic trends only in the relatively distant future. Even with declining populations, the Western nations should be able to maintain force levels if they create new incentives for military service. The pool of potential recruits can be enlarged through changes in age and sex requirements, and organizational and technological improvement can compensate for fewer numbers. In any case, a large-scale, extended conflict involving conventional forces is only one among many possible warfare scenarios. The arguments for trying to increase fertility today to serve the hypothetical defense needs of tomorrow are not compelling.

Wattenberg and Zinsmeister argue that fertility decline will sap the economic vigor of the West—and, thus, ultimately, its power. They comment that "the mechanics of low fertility are such that the West may be headed for a difficult time economically in the intermediate to long-range future. [Western] Europe, North America, Japan and Australasia will likely be aging, with fewer and fewer young workers and fresh ideas fueling the bottom of the social pyramid. Many important economic markets will be disrupted at least temporarily. . . . Society will move from growth, to stasis, and then to absolute decline."[15]

Their analysis seems to be at odds, however, with the views of another segment of conservative opinion influential within the Reagan administration. Those are the views that were officially expressed by the U.S. delegation (of which Wattenberg was a member) to the International Conference on Population at Mexico City in 1984. The delegation held that population growth is a "neutral phenomenon" in its relationship to development. Accordingly, governments should not seek to influence fertility behavior for economic reasons; rather, what is needed to bring about economic development in the Third World are market-oriented economic policies. But if one is to adhere to that doctrine, as Wattenberg and Zinsmeister do, one cannot logically reject its application to the industrialized countries. Indeed, the laissez-faire course would seem to be much more appropriate for the latter, where population change is occurring more slowly and where the capacity for economic and technological adaptation is much greater. Western European countries, for which population stabilization has been a fact of life for the past decade, seem to have chosen primarily to adjust to the demographic situation, as there is only a weak constituency for pronatalist policies.[16] Most European analysts now appear to believe that carefully chosen economic policies, plus the development of new markets overseas and continued technological progress, will maintain economic growth.

Whose Values?

Concern is also being expressed over the ability of the West to continue promoting its values overseas if its population starts to decrease. This worry seems to derive from a Manichaean worldview that asserts, in effect, that Western values, especially those that emphasize the supremacy of individual rights, are an unalloyed good that must prevail everywhere. Such a viewpoint leaves little room for other values that might be preferred by other societies and cultures, and assumes that the benefits brought to the Third World by the West—science, technology, medicine, access to global markets, concepts of law—have been without cost to the recipients. Furthermore, this view implies that the continued hegemony of particular (i.e., Western) nations is essential for progress. However, whether Western values prevail in the centuries ahead—the time frame we are discussing—will depend more on their intrinsic merit than on proselytizing foreign policies, sophisticated weapons systems or higher fertility.

At the core of American conservatives' anxiety over declining population size is the fear that depopulation will increase the probability of eventual Soviet dominance and the spread of communism around the world. But isn't this an exaggerated alarm? Recent trends in Soviet influence give greater cause for optimism than for pessimism. It is Western, not Soviet, goods that are coveted by citizens of developing countries, and it is to the West that thousands of would-be immigrants clamor for admission. On the societal level, many of the world's peoples have

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shown determination to preserve their autonomy and to adopt only those aspects of foreign culture and practices—capitalist or socialist—that they deem compatible with their own. The evidence that many of them are about to swallow the Soviet hook is weak.

The broader issue here concerns the prospects for the extension of democracy in a world in which the population of Western nations is decreasing relative to that of the rest of the world. However, posing the issue in this way is simplistic and misleading. For one thing, democracy is not to be equated with geographic location. We should recall that while democracy has historical roots in Western Europe, within recent memory it was temporarily eclipsed in several European countries. Since the Second World War, moreover, a number of countries, including Argentina, Brazil, Ghana, Nigeria and Turkey, have moved back and forth between democratic and nondemocratic forms of government.[17]

Additionally, if Japan may be regarded as part of the West, why not other countries? There are grounds for hope in the recent signs of returning democratic freedoms in Argentina, Brazil, other parts of Latin America and possibly the Philippines. Moreover, while few would contest the proposition that a strong United States is a force for democracy in the world, many analysts could also point to instances in which the United States has used its power to maintain nondemocratic regimes. In any case, the underlying social structure and levels of economic development of a nation may be more important determinants of democracy than international influence.[18] Finally, even if one believes that the Western alliance is directly or indirectly influential in shaping foreign political systems, this influence is unlikely to be eroded by any population decline that can realistically be expected in the foreseeable future.

What Should Be Done?

We can identify three broad types of policy responses to declining fertility: adjustments in economic and social policies, as well as in defense planning; controlled immigration; and pronatalist measures.

The first course, that of policy adjustment, is already being implemented in many sectors, although it is not always recognized as relating to fertility decline because most public policies involve multiple considerations, of which demographic concerns are only one. Efforts to reform the social security system, which is being seriously affected by changes in age-structure brought about by declining fertility, are but one example of the policy of accommodation. However, continuation along such an incremental path is clearly not the goal of activists who try to stir up fears about the current low levels of childbearing.

The second course—increasing population size through immigration—seems quite feasible. Studies have shown that remarkably small changes in the current level of immigration would keep the nation growing through the next century under any realistic assumptions about fertility and mortality.[19] Controlled immigration could, therefore, ensure the vitality of the nation and meet many of the concerns raised by Wattenberg and Zinsmeister and others. In this respect, the situation of the United States differs from that of most Western European countries, where high levels of unemployment, coupled with high population densities, make immigration a less attractive proposition, at least for the time being. Wattenberg and Zinsmeister acknowledge a role for immigration in the United States, but they downplay its significance on the ground that it is not politically feasible. Although it is true that immigration may not be popular among many of those who are most receptive to Wattenberg's and Zinsmeister's arguments, immigration is both within the American tradition and an appropriate response to any deficiency in natural increase.

The third course is to seek to promote higher fertility. For example, the possibility of introducing European-style family-policy measures to the United States in order to lessen the burden of parenthood on working couples has been increasingly discussed.[20] Such measures might include instituting an extended period of paid maternity leave; permitting time spent caring for young children to count toward the calculation of social security or pensions; providing free or subsidized day-care facilities; and providing greater tax relief and old-fashioned cash allowances for families with children. Indeed, within the past decade, there has been a considerable expansion of family benefits through the private sector in the United States, although so far few of them have become enshrined in public policy.[21]

Nevertheless, welcome as these measures might be as a means of improving the quality of children's lives, there is little evidence that policy changes can bring about more than a small and temporary increase in the number of births. In East Germany, Hungary and Romania, where fertility had fallen below replacement level by the 1960s, pronatalist policies did manage to raise birthrates for a time. By 1984, however, fertility had once again fallen below replacement level in these countries. (Even the highly repressive aspects of measures introduced in Romania in 1967—the suppression of abortion combined with continued prohibitions on contraceptives—were effective only until women remembered that traditional methods of contraception are a great deal better than nothing.[22])

Wattenberg and Zinsmeister clearly recognize the difficulties and limitations of specific incentives and new institutional arrangements, perhaps not least because they potentially involve greater government intervention in society. They conclude that "it is in the realm of the spirit that the most important changes must come."[23] Certainly, a return to a more family-oriented way of life would seem to be an essential precondition for the return of higher fertility. Since we know little of the psychological correlates of childbearing, however, society is not yet in a position to design educational programs or other measures that are likely to encourage couples to have larger families. We are inclined, moreover, to question the value of appeals based on cultural nationalism and fears of other people's numbers. Might it not be more desirable for us to try to engender a greater faith in the long-term prospects for democracy around the world, a spirit of openness to newcomers, and a determination to seek and promote what is best in all cultures, not just in Western societies? This would be a more positive message to send to young couples who are engaged in planning their families.

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Research Note

Sterilization Regret Among U.S. Couples

By Stanley K. Henshaw and Susheela Singh

Sterilization is the most popular contraceptive method in the United States. As of 1982, about 9.4 million U.S. couples had elected to protect themselves from pregnancy by sterilization of one or both partners.[1] The procedure has obvious advantages: It is almost 100 percent effective, it requires no thought or effort after the initial operation, and it is relatively inexpensive when the cost is amortized over the years of contraceptive benefit. The method, however, has one major disadvantage: If a sterilized individual wants the procedure reversed, the operation is costly, difficult and frequently unsuccessful.

Research on the extent to which sterilized individuals regret their decision is important, therefore, for several reasons. First, we need to know whether the extent of regret is so great as to make voluntary sterilization inadvisable in general or for certain population groups. Second, more understanding of the factors that contribute to a desire for sterilization reversal might help counselors identify individuals at high risk of regret, so that they can be given special attention. Third, quantifying the need for sterilization reversal would be useful in planning services to meet that need.

The 1982 National Survey of Family Growth (NSFG) attempted to measure sterilization regret. This survey of 7,969 U.S. women aged 15–44 included three questions on the subject. First, women in couples protected by sterilization were asked whether they would like to "have a(nother) baby."[*] If the answer was yes, they were asked whether they (and their husbands if they were married) would like to have the sterilization reversed if it could be done safely.[†]

In this research note, we will present an analysis of the answers to these questions. However, a meaningful interpretation of the data is extremely difficult. Many women may be speaking of an ideal scenario when they say that they would like to have more children; for practical reasons, they might choose not to do so. In addition, the survey asked only women about the desire for more children; it did not explore the attitude of the male partner. Even those who say that they would like to have the operation reversed may not be highly motivated to undergo the procedure. They were not asked to consider the cost, inconvenience, risk to health and failure rate. For these reasons, answers to the questions are not a good indication of the strength of regret, and they provide an inconclusive measure of need or potential demand for this type of infertility service.

Although the proportions who would actually have a reversal are likely to be overstated in this analysis, the data are worth examining as a first step in quantifying the extent of sterilization regret and understanding the desire for reversal. The logical next step, a multivariate analysis, was beyond the means of the larger study from which this analysis originates.[2] More detailed studies of the NSFG and of other data sets containing information about sterilization, as well as the collection of new data, are needed.

Couples Expressing Regret

Table 1 summarizes data for 8.6 million couples who chose sterilization for contraceptive reasons and who had either a vasectomy or tubal ligation—procedures that are poten-

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[*] The question was, "If it were possible for you to have a(nother) baby, would you, yourself, like to have one?"

[†] The questions were, "As things look to you just now, if the operation could be safely reversed, that is, changed back, would you want to have it reversed?" and "Would your husband like to have it reversed?" The permissible answers were "definitely yes," "maybe yes" and "definitely not."

Table 1. Number and percentage distribution of U.S. couples protected by vasectomy or tubal ligation; percentage who want more children; number and percentage who want a sterilization reversal; and percentage distribution of those who want a reversal, by selected characteristics; 1982 (numbers in 000s)

Characteristic	Total		% who want more children	Want reversal		
	No.	% dist.		No.	% of total	% dist.
Total	**8,583**	**100**	**26**	**882**	**10**	**100**
Age-group†						
20–24	388	5	42*	42‡	11*,‡	5‡
25–29	1,221	14	41	269	22	30
30–34	2,351	27	32	285	12	32
35–39	2,441	29	21	163‡	7‡	18‡
40–44	2,183	25	13	123‡	6‡	14‡
Race						
Black	916	11‡	28	160	17*	18‡
Other	7,667	89	25	722	9	82
Ethnicity						
Hispanic	511	6‡	49*	151‡	30*,‡	17‡
Other	8,072	94	24	731	9	83
Poverty status, by age						
<30, <150%	543	0‡	41	121‡	22‡	14‡
<30, ≥150%	1,066	13‡	41	190‡	18	22‡
≥30, <150%	1,214	14	25	184	15‡	21‡
≥30, ≥150%	5,760	67	22	387	7	44
Medicaid recipient						
Yes	466	5	40	132‡	28*,‡	15‡
No	8,117	95	25	750	9	85
Years of education						
<12	1,461	17	30	207‡	14	24‡
12	4,063	47	28	420	10	48
>12	3,059	36	20	255‡	8	29‡
Person sterilized						
Woman	5,535	64	26	619	11	70
Man	2,979	35	25	247	8	28
Both	69‡	1‡	24‡	16‡	23‡	2‡
Currently married						
Yes	7,177	84	25	587	8*	67
No	1,406	16	31	295	21	33
Parity						
0	318	4‡	39‡	71‡	22‡	8‡
1	720	8‡	33	101‡	14	11‡
2–5	7,334	86	24	677	9	78
>5	210	2‡	21‡	33‡	16‡	4‡
Last birth§,**						
Planned	4,384	53	25*	368	8	45
Mistimed	2,311	28	31	283	12	35
Not wanted	1,555	19	17	160‡	10	20‡
Age at sterilization						
<30	4,457	52	33*	629	14*	71
≥30	4,125	48	17	253	6	29
Years since sterilization						
<5	4,105	48	31*	520	13*	59
≥5	4,478	52	21	362	8	41
Teenage parent, by age**						
<30, teenage birth	844	10‡	42	176‡	21	22‡
<30, no teenage birth	675	8‡	40	100‡	15	12‡
≥30, teenage birth	2,012	24	19	191‡	9	24‡
≥30, no teenage birth	4,734	58	23	344	7	42

*Difference between at least one pair of demographic subgroups is statistically significant ($p \leq 0.05$).

†The survey included women 15–19, but the number contraceptively sterilized was too small for analysis.

‡Relative standard error is 30 percent or greater. §Data for 15 couples are missing.

**Excludes 318 who had no children, 71 of whom wanted reversal.

tially reversible. (Another 860,000 women say they have had a hysterectomy for contraceptive reasons.) Twenty-six percent of the female partners of these couples with potentially reversible sterilizations—some 2.2 million women—say they would like to have a child or additional children. Thirty-nine percent of these women—about 10 percent of the total—report that both they and, if married, their partners want to have the sterilization reversed.[*]

The proportion of women dependent on contraceptive sterilization who say they want more children is highest among those aged 20–29 (slightly more than 40 percent), then declines with rising age to a low of 13 percent among women 40–44. Some of the older women, of course, may have wanted more children when they were younger, but changed their minds with advancing years.

Those aged 25–29 are the most likely to want another child and want a reversal of their sterilization (22 percent do so). A lower proportion (11 percent) at ages 20–24 may reflect a lack of time for regret to have developed; the interval since sterilization for these women probably averages no more than a year or two. (The number dependent on sterilization in this age-group is also very small, making the percentage statistically unreliable.) Of all women who say they want a reversal, 62 percent are aged 25–34.

Black women who depend on sterilization are not significantly more likely than their nonblack counterparts to report that they want more children. But for women who do want more, a significantly higher proportion of blacks than of others say they would like a reversal. Blacks make up 11 percent of contraceptively sterilized couples but 18 percent of those who want the procedure reversed.

Forty-nine percent of Hispanic women who are protected by contraceptive sterilization report that they would like more children, and 61 percent of these women state that they want a reversal. As a result, a higher proportion of Hispanic women than of any other population group say they want a reversal—30 percent, compared with just nine percent of non-Hispanic women. Hispanics represent just six percent of contraceptively sterilized couples but 17 percent of those who express a desire for reversal. This striking and significant difference between Hispanic and non-Hispanic women is difficult to explain, and may indicate cultural bias in the responses to these questions. Since poverty and low educational attainment are highly correlated with black race and Hispanic origin, some of the racial and ethnic differences may also reflect differences in socioeconomic status.

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[*] Unmarried women were asked only whether they themselves wanted a reversal. A married couple was recorded as desiring a reversal if the woman reported that the sterilized partner "definitely" wanted a reversal and the nonsterilized partner "definitely" or "maybe" wanted his or her partner to have a reversal.

Poor women (those with incomes below 150 percent of the federal poverty index*) are significantly more likely than women of greater means to report that they would like to have their sterilization reversed—17 vs. eight percent (not shown). This finding, however, appears to be largely because those women are concentrated in the younger age-groups. When women in each economic category are compared by age-group (younger than 30 and 30 years and older), poor women still have somewhat higher proportions wanting a reversal, but the difference is no longer statistically significant. Significantly higher proportions of Medicaid recipients than non-Medicaid recipients want a reversal, but this may also be because Medicaid women are generally younger than others.

Differences by education are not significant, although the pattern reveals a declining proportion who want more children or want a reversal of their sterilization as education rises. Metropolitan status and geographic region also have no statistically significant effects (not shown). Neither is there a difference in the proportion expressing regret by whether the woman or her partner was sterilized; however, it must be remembered that only women were interviewed.

Women who are not currently married are significantly more likely than married women to express a desire for reversal (21 vs. eight percent), possibly a reflection of changes in the life circumstances of those who are separated, divorced or widowed. Although only 16 percent of sterilized women are unmarried, 33 percent of those desiring a reversal fall into this category.

The number of children a woman has had shows little association with sterilization regret. Those with no children appear to express more regret, but the numbers are small and not statistically significant. Women whose last child was wanted (either planned at that time or wanted later but mistimed) are significantly more likely to say they want another child than women whose last birth was unwanted. However, whether or not the last birth was wanted makes no significant difference in the desire to have a reversal.

Women who were sterilized before age 30 are significantly more likely than those who were aged 30 or older when they were sterilized to want another child (33 vs. 17 percent) and to desire a reversal (14 vs. six percent). Women who had a tubal ligation less than five years ago are significantly more likely to say they want another child than those who had the surgery more than five years ago (31 vs. 21 percent). The desire for a reversal is also associated with the number of years since the operation, but the difference is not statistically significant.

The significant relationships noted between the desire for more children or the desire for reversal and age at sterilization or number of years since sterilization are difficult to interpret; they are also associated with current age, which is highly correlated with desire for more children and for reversal. Therefore, differentials in the level of sterilization regret might change in a multivariate analysis, where each factor is analyzed while the others are controlled for.

If we hypothesize that women who started childbearing early, perhaps because they were not successful in using reversible methods, are more likely than women who started childbearing later to resort to sterilization at an early age, then we might also assume that the former would be more likely to regret their sterilization decision. However, the data show that women who had a birth while teenagers—represented in about 35 percent of all sterilized couples—are no more likely than those who did not have a teenage birth to want another child. Although they are more likely to say they want a reversal—13 vs. eight percent (not shown)—the difference is not statistically significant, and when teenage parenthood is analyzed by current age, there are no significant differences.

Conclusions

Simple cross-tabulations without multivariate controls suggest that desire for sterilization reversal is highest among women who are black, Hispanic or unmarried; have a low family income; receive Medicaid; and are sterilized before age 30. However, as we have indicated earlier, the data do not allow us to assess the intensity and persistence of these desires. If the results are to be believed, some 880,000 couples would like to have their sterilizations reversed, yet only about 21,000 such procedures take place each year (18,000 fallopian tube repairs and 3,000 reconstructions of the vas deferens in 1983).[3] It is difficult to know whether only this small number of couples are sufficiently motivated to undergo the operation or whether there are other barriers, such as insufficient knowledge or lack of funds, that prevent people from realizing their wishes.

Nevertheless, the amount of expressed desire for sterilization reversal is a matter of concern. Clearly, more research is needed to assess the strength and persistence of the desire for more children and sterilization reversal; to ascertain whether those who desire more children in fact regret their decisions to be sterilized, as has been assumed; and to understand why people change their minds. Providers of sterilization services should be aware that 10 percent or more of their patients may later regret their decisions.

Even if further research confirms the existence of a high level of regret, voluntary sterilization should not necessarily be discouraged. The disadvantages of sterilization must be weighed against the disadvantages of relying on other methods of contraception, which include higher rates of unintended pregnancy. If people were discouraged from being sterilized, it may well be that more couples would later regret not having been sterilized than now regret that they have had the operation. For example, low-income women appear to have one of the highest levels of sterilization regret. They also experience more unintended pregnancies and unwanted births than other women, and without sterilization, this tendency would probably be increased.

Although the expressed desire for more children or desire for sterilization reversal, as measured here, may be an overstatement of the true demand for reversal operations, it still reflects a substantial level of dissatisfaction with sterilization as a means of fertility control. It is possible that if more acceptable methods of reversible contraception were available, fewer women would resort to sterilization at young ages, and the level of sterilization regret would be much lower.

References

1. Estimated from data from the 1982 National Survey of Family Growth, National Center for Health Statistics, DHHS.

2. The Alan Guttmacher Institute, "Infertility Services in the United States: Need, Accessibility and Utilization," report to the DHHS, New York, Dec. 1985.

3. Unpublished information from the Hospital Discharge Survey, National Center for Health Statistics, Dec. 1985.

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*In 1982, the year of the survey, a family of four would be defined as falling within 150 percent of the federal poverty level if its income was $14,793 or less. (See: U.S. Bureau of the Census, "Money Income and Poverty Status of Families and Persons in the United States, 1982," *Current Population Reports*, Series P–60, No. 140, 1983.)

Letters from Readers

Medicaid Expenditures for Newborns

The May-June issue of *Perspectives* [**18**: 103, 1986] carried an important article on Medicaid expenditures for maternity care that policy-makers will certainly find useful. However, we would like to amplify one of the central conclusions contained in the article.

The authors discuss the cost to state Medicaid programs of furnishing neonatal intensive care (NIC) to newborns. On the basis of data from 13 states, they conclude that the proportion of Medicaid infants requiring neonatal intensive care averages 6.1 percent, which is relatively consistent with national estimates indicating that six percent of all newborns require intensive care. However, the authors admit that a "substantially greater percentage might have been expected in the Medicaid population, which is generally considered to be at high risk."

In our opinion, many states may have unintentionally supplied the authors with misleading information that understates the use of hospital services by Medicaid infants. Moreover, readers should not infer from the information published in the article that hospitalization costs for Medicaid infants are no greater than those for the infants of women who are not poor.

In the first place, the article does not indicate the precise definitions used by each state in deciding when an infant's hospitalization amounts to an NIC episode. If state Medicaid agencies include only hospital stays occurring at facilities bearing a formal NIC designation, then the number of infants reported to have received NIC services may be far lower than the number actually receiving hospital care during the neonatal period.

Such misleading tabulations may explain the low percentage of Medicaid infants reported to have received NIC services in Michigan (2.6 percent). In 1983, Michigan had the second highest percentage of nonwhite infants born at low birth weight (13.6 percent). In Florida, on the other hand, 11.8 percent of all nonwhite newborns were of low birth weight, and yet more than 20 percent of all Medicaid infants were reported to have received NIC services. While it is true that a larger proportion of Florida's Medicaid recipients are nonwhite (50 percent, compared with 35 percent in Michigan), this disparity cannot account for an NIC admission rate in Florida nearly eight times higher than that in Michigan.

Second, when comparing the use of hospital inpatient services by Medicaid infants with their use by other newborns, it is vital to look not only at the percentage of the population that receives such services but also at length of stay and readmission rates. Otherwise, estimates of inpatient hospital costs will be incomplete.

Lengths of stay in an NIC unit can vary dramatically according to the infant's birth weight. While an infant weighing five pounds may need only a few days in intensive care, one weighing 1.5 pounds can be hospitalized for two months. If the incidence of very low birth weight is higher among the infants of poor women, as several studies have suggested, then length of stay would most certainly have to be taken into account before cost comparisons could be drawn.

In addition, infants of very low birth weight run a greater risk of requiring rehospitalization during the first year of life than do heavier babies. If these costs are not taken into account, a considerable proportion of Medicaid expenditures by states may be overlooked.

In conclusion, we believe that the only accurate way to assess the hospital utilization levels of Medicaid infants is to document the number of hospital inpatient days used in a year by each infant Medicaid recipient or enrollee. To look only at services bearing the NIC label, and to overlook variations in length of stay and readmission rates, will lead to sizable underestimation of infant care costs for Medicaid babies.

Such underestimates will affect calculations of the cost-effectiveness of maternity care for pregnant women eligible for Medicaid. They also pose a real danger in times of growing capitation. As the article points out, substantial numbers of Medicaid recipients are being enrolled in capitated health plans. If these plans seriously underestimate the cost of serving pregnant women and their infants, severe underfunding may result, with an attendant diminution in the availability and quality of health care.

Sara Rosenbaum, Director, Child Health
Dana Hughes, Senior Health Specialist
Children's Defense Fund
Washington, D.C.

In the article "Medicaid Expenditures for Maternity and Newborn Care in America," by Asta Kenney, Aida Torres, Nancy Dittes and Jennifer Macias [**18**:103, 1986], the authors reported that 8.6 percent of deliveries in Mississippi in 1984–1985 were covered by Medicaid, for a total of 3,680 Medicaid births in the state. These figures are far lower than the estimates made from sample surveys carried out in Mississippi in 1982, 1983 and 1984, which indicated that in the first two years, 26.2 percent of births were covered by Medicaid (12,033 and 11,526 births, respectively), while in 1984, 27.4 percent (or 11,985 births) were covered.

We obtained these estimates from information on funding sources provided by 53 percent of all hospitals in the state. These hospitals account for 68 percent of all births in Mississippi hospitals. The figures for 1982 were independently verified by members of our staff carrying out a review of Medicaid data for the state. We believe that the higher estimates are the more accurate ones.

We have worked very hard in recent years to increase Medicaid eligibility and enrollment in our state. By including married women among those eligible (well before such a step was taken at the national level) and by raising the income level determining eligibility to 50 percent of the poverty level, we added 2,000 pregnant women to the Medicaid rolls. The availability of accurate information aided us in this process. However, the estimates for Mississippi published in the *Perspectives* article confuse the picture.

Although, overall, the article provided some valuable information, the authors should exercise greater caution when publishing statewide data not based on more reliable estimates.

Alton B. Cobb
State Health Officer
Mississippi State Department of Health

The Authors Reply:

We agree with Sara Rosenbaum and Dana Hughes that the data presented in our article are by no means perfect. We explained in the article that research on services provided under Medicaid and on the numbers of persons receiving specified services is extraordinarily difficult to conduct, and that obtaining good data on neonatal intensive care is particularly problematic. Nevertheless, we are confident that our overall estimate—that 6.1 percent of Medicaid infants in the 13 states studied need neonatal intensive care—is based on the best data available, although the estimate is probably conservative.

We find the wide state-to-state variations in the incidence of Medicaid-funded neonatal intensive care quite plausible. Other studies have found considerable variations in the proportion of newborns requiring Medicaid-subsidized neonatal intensive care, and we think even wider variations are quite likely. Many factors could account for the wide ranges, including variations in state policies on Medicaid-subsidized neonatal intensive care, in definitions of neonatal intensive care, in the composition of the Medicaid populations, and in the ability of hospitals to obtain Medicaid reimbursement for a newborn infant when the mother—as often happens—doesn't apply for coverage for the infant. Another possible contributing factor is that support for neonatal intensive care units comes from funding sources other than Medicaid, which points up the fact that there are important public costs not paid by Medicaid. We would also point out that prematurity and very low birth weight are better indicators of neonatal intensive care than is low birth weight.

We concur with our critics that our article understates the long-term Medicaid costs resulting from neonatal intensive care. Our study focused only on pregnancy and the postpartum period, and did not seek to examine longer term costs. It might have been prudent, however, to include a sentence acknowledging that future Medicaid expenditures for infants graduating from neonatal intensive care are likely to be higher than those for healthy newborns.

Our estimates of expenditures for neonatal intensive care did take into account the length of the infant's stay—so long as Medicaid was subsidizing it. When Medicaid ceased to pay, however (as often happens because of ceilings on the number of hospital days eligible for reimbursement), the infant's hospital stay was no longer in the province of our survey.

We think a study comparing inpatient service utilization by Medicaid and non-Medicaid infants, as discussed by Rosenbaum and Hughes, would be enormously valuable. The purpose of our study was simply to assess the number of women and infants obtaining Medicaid-subsidized maternity and newborn care and the public expenditures for such care.

We regret that the State of Mississippi did not furnish us with the information in Dr. Cobb's letter at the time of the survey. We included in our article all data given to us by the states, provided they seemed reasonable once the definitional issues had been resolved. However, had we been given the Mississippi data at that time, we would have been obliged to query some of the information, since it places Mississippi in the position of paying for a higher proportion of births under Medicaid than does any other state. This result is unexpected because even though Mississippi has a large poverty population, it does not have one of the broadest Medicaid programs in the country. We wonder whether the 53 percent of hospitals responding to the survey on funding sources for maternity patients overrepresented hospitals with large numbers of Medicaid births.

When a state did not furnish the number of Medicaid births, we made estimates on the basis of the most reliable data available to us. We recognize that our estimates are conservative, but we think they are reasonable. In two states for which we made estimates and that subsequently furnished us with data, we found that our estimates were very close to the number of reported Medicaid births in one state and were actually higher than the number reported in the other state. Accordingly, we find it hard to believe that our estimate is as much below the actual figure as the new Mississippi data would indicate.

Our methodology for making estimates was as follows: Based on data from the March 1985 Current Population Survey and the DHHS Health Care Financing Administration's Fiscal Year 1984 Standard Tables, we estimated the number of women aged 15–44 receiving Aid to Families with Dependent Children and the number of those assessed as being "medically needy," by state. We then calculated, based on findings from the 1982 National Survey of Family Growth, that the birthrate among Medicaid recipients is 12 percent higher than the rate for all U.S. women. The 12 percent figure was applied to the state's overall fertility rate to estimate the birthrate among women on Medicaid and the number of births to Medicaid recipients.

Correction

In "The Effects of Sex Education on Adolescent Behavior" [**18**:162, 1986], by Deborah Anne Dawson, the second full sentence of column 2 on page 169 should have read as follows: Moreover, under the alternate assumption (that education always postdates coitus), contraceptive education exhibits no effect on initiation of intercourse at age 14.

Perspectives is indexed in *Cumulative Index to Nursing and Allied Health Literature, Current Contents, Human Resources Abstracts, Index Medicus, POPLINE Previews, Population Index, Psychological Abstracts, PAIS Bulletin, Review of Population Reviews* (CICRED), *Sage Family Studies Abstracts, Social Sciences Citation Index,* and *Statistical Reference Index*

Books in Review

The Fragile Family

The Divorce Revolution: The Unexpected Social and Economic Consequences for Women and Children in America

by Lenore J. Weitzman, Free Press, New York, 1985, $19.95, 528 pp.

Reviewed by Arland Thornton

The revolution in divorce is a central feature of the continuing transformation of American family life. The divorce rate generally has been increasing since the middle of the 19th century, and during the 1960s and 1970s the increase was so extensive that projections of the proportion of marriages that would end in divorce reached 50 percent. This revolution in divorce cries out for an exploration of its causes, its consequences and its meaning for individuals and institutions. *The Divorce Revolution*, by Lenore J. Weitzman, makes a valuable contribution to this effort.

Weitzman's book places particular emphasis on California, the state where the first no-fault divorce law was enacted (in 1970). The author's research focuses on the effects this legal transformation has had on the men, women and children who have experienced divorce. In an extensive investigation conducted over a decade, Weitzman assembled information from the divorce court records of Los Angeles County in 1968, 1972 and 1977, and from the court records of San Francisco County in 1968 and 1972. In 1974 and 1975, she interviewed matrimonial lawyers and judges in those counties who were hearing divorce cases. In 1978, she conducted interviews with divorced people in Los Angeles; however, as I will detail later, the generalizability of the findings from the latter interviews is limited because of the relatively low proportion of the originally chosen sample that was actually interviewed.

Weitzman reports that the 1970 California statute introduced six innovations that fundamentally altered the process and outcome of divorce: the abolition of all grounds for divorce except "irreconcilable differences"; the abolition of fault and the elimination of a moral framework focusing on guilt and innocence; the establishment of the ability of one spouse to unilaterally decide to divorce; the unlinking of the financial settlement from issues of guilt and innocence; the rejection of a sex-based division of labor and resources between husbands and wives and its replacement by a standard of equality; and the undermining of the old adversarial process and the development of procedures to enhance the potential for amicable divorce.

Although Weitzman recognizes some positive outcomes of these legal reforms, particularly in reducing the conflict associated with the divorce process, and although she argues against returning to the old system, her primary theme is that these innovations have weakened the bargaining position of women in the divorce process. Weitzman contends that the legal system now treats women and children less fairly and less generously than it once did, and that "the major economic result of the divorce law revolution is the systematic impoverishment of divorced women and their children" (p. xiv). In Weitzman's opinion, the primary difficulty with the new law is that it requires the equal treatment of husbands and wives before the law, when, in fact, gender-based division of labor within the family and the differential specialization and experience of each partner bring wives and husbands to the divorce court with unequal resources, opportunities and constraints. The result is serious inequities between divorcing women and men. Weitzman argues that in contrast to the new system, the old approach explicitly protected gender-based division of labor within the family and required the husband to continue to provide for his family after divorce.

Weitzman's data from the 1968–1977 California divorce records provide evidence that the outcome of divorce settlements has substantially changed as a result of the legal reform. In 1968, under the old system, most of the family's assets went to the wife in a majority of cases, but by 1977 there was an approximately equal division in the majority of the cases. Whereas the preponderance of the family's home equity was awarded to the wife in 61 percent of the 1968 Los Angeles cases, that proportion had dropped to 46 percent by 1977. In addition, the proportion of cases in which the family home was ordered sold as part of the divorce settlement increased from about one-tenth to about one-third. Similarly, in Los Angeles County, the proportion of alimony awards that were open-ended, rather than temporary or transitional, fell from approximately two-thirds to one-third between 1968 and 1972.

Weitzman's interviews with divorced people in Los Angeles County in 1978 help document the differential impact of divorce on men and women. On average, women and their children experience a substantial decline in their standard of living following divorce, while men's average standard of living actually rises after divorce. Weitzman concludes from her Los Angeles data that "one year after legal divorce, *men experience a 42 percent improvement in their . . . standard of living, while women experience a 73 percent decline*" (p. 339; emphasis in original).

Weitzman's estimates are emphasized throughout the book, and they have been accorded wide publicity in the press as reflecting a general pattern. For this reason, it is important to mention that the differential change Weitzman reports for Los Angeles is several times greater than the differential estimated from national data. Analyses of data from the Panel Study of Income Dynamics showed that over the seven-year period 1967–1973, the standard of living of women who divorced or separated at any point during that time declined by seven percent, while that of comparable men improved by 17 percent.[1] (These analyses led to the development of the methodology used by Weitzman in her work.) More recent estimates from the same study indicate that the income-to-needs ratio for divorced or sepa-

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rated women in the year following marital dissolution was nine percent lower than in the year before the marital dissolution, whereas for divorced or separated men, it was 13 percent higher.[2]

There are many possible explanations for these widely divergent estimates. For one, Weitzman focuses on divorce in Los Angeles in 1978 and uses retrospective reports of predivorce income, while the panel study produced current reports of income from a national sample of couples separating or divorcing between 1968 and 1975. Also relevant is the relatively low response rate in Weitzman's study: She was unable to locate nearly 50 percent of the divorced men and women who were originally chosen for the sample, and she was not able to interview 17 percent of those located. This rate of attrition introduces the potential for significant bias.

Because of the importance of this issue, further research is called for. In the meantime, I believe that the estimates derived from the national panel data are probably the most reliable. This observation, however, should not detract from the fact that all the estimates show that divorce affects men and women differently.

Although Weitzman's conclusions about the impact of divorce law reform on settlements and about the differential impact of divorce on men and women are well supported by empirical evidence, her claim that the "systematic impoverishment" of divorced women and their children is the major economic result of divorce law reform is not supported by her empirical data. To support this conclusion, one must go beyond the observations that the California reform changed the outcome of divorce settlements and that divorce currently impoverishes women and children. One must also show that the new law caused the standard of living of divorced women and their children to be lower than that of similar people under the old system. What is needed is a comparison of changes in the economic well-being of people who divorced before and after the new law was enacted—a comparison that Weitzman's research design does not permit. Without this longitudinal comparison, we can only observe that under the present system, divorce causes impoverishment of women and their children. However, we cannot draw any conclusions about how the economic impact of divorce may have been changed by the modification of the legal system.

I believe that when appropriate data are gathered and interpreted, we will find that the impact of divorce law reforms on the actual living standards of divorced women and their children has been smaller than is suggested by Weitzman. Although she sometimes points out that the old system of divorce may not have always protected divorced women and their children, the book as a whole seems to downplay the economic problems divorced women and their children experienced under that system. Divorce produced very negative economic results for women and children long before the legal reforms of the 1970s. The primary social, economic and legal factors that Weitzman and others argue are the basic causes of economic misfortune among divorced women and their children today were essentially in place before the reforms: Alimony was only awarded in a small minority of cases; alimony and child support awards were probably small and often were not paid; couples had few assets to divide; the most important assets (such as human capital, business goodwill, pensions and insurance) were not considered marital property to be divided; women were disadvantaged in the labor market; and they disproportionately faced the constraints and demands imposed by childrearing. The new system and its impact on divorce settlements may have accentuated these preexisting negative factors, but I would be surprised if the actual living standards of divorced women and their children were substantially better before the divorce law reforms than they are today.

Nevertheless, I am sympathetic with Weitzman's concern that laws mandating equality may, under certain circumstances, actually produce inequality and inequity. Weitzman is probably correct when she argues that the equal treatment of wives and husbands in divorce proceedings is likely to produce inequity. Thus, it is possible that even if the old system had not itself impoverished women economically after divorce, the new system would have produced that outcome.

As I read *The Divorce Revolution*, I sometimes found myself distracted by the book's reliance on the mass media as its source of information about the family, and concerned about the accuracy of some of the facts presented. For example, on page 187, Weitzman states that "just 25 years ago, only four percent of the divorces involved couples married more than 15 years. Today, 20 percent of the divorces dissolve marriages of 15 years or more." Having just coauthored a paper showing the uniformity of the trends in divorce by marital duration,[3] I was surprised by this statement. A footnote says that the source of this information is the *Wall Street Journal;* however, while the article in the *Journal* reported its source of data as a person from the Older Women's League, it did not provide a published document to consult. Using data from the *Vital Statistics of the United States*,[4] I estimated the proportion of all divorces occurring among people married 15 years or longer to have been about 18 percent in 1955, 21 percent in 1960 and 20 percent in 1981. Consequently, I am doubtful about the four percent figure for 25 years ago. Another example is Weitzman's report that Hoffman and Holmes found the standard of living of divorced or separated women to have declined by 29 percent. The original article gave a figure of seven percent.[5]

One crucial message of *The Divorce Revolution* is that the rise in divorce and its impact on women is modifying the institution of marriage, the structure of the family and the commitment of individuals to their kin. Now that women cannot place full confidence in marriage as a source of financial and emotional security, and now that they have more ways to support themselves economically outside the family, they may be less motivated to devote themselves primarily to childrearing and homemaking, and may be more motivated to invest in themselves, their careers and their capacity to earn money. As a result, women may be less willing to marry and to have children, and may be more able and willing to terminate an unsatisfactory marriage. In fact, many of the trends predicted by this line of reasoning have been documented by a growing body of research. However, we still need to conduct the research that demonstrates the causal connections among the various trends in family life.

In summary, *The Divorce Revolution* provides convincing new information about the way the reform of divorce law has influenced divorce settlements. It is also a major vehicle for publicizing the economic consequences of divorce for women and children. However, the book leaves many unanswered questions, and a substantial amount of research remains to be done concerning the causes and consequences of the divorce revolution.

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Whence the Decline?

Demographic Responses To Development: Sources of Declining Fertility in the Philippines

by Robert A. Hackenberg and Henry F. Magalit, Westview Press, Boulder, Colo., and London, 1985, $22.00, 332 pp.

Reviewed by John E. Laing

Philippine fertility declined during the 1970s primarily as a result of changing marriage patterns and only slightly, if at all, as a result of contraceptive practice, according to this analysis of fertility trends in that country. The authors, whose affiliations include the Population Research Program at the University of Colorado, the Davao Research and Planning Foundation of the Philippines and the University of the Philippines, reach their conclusion chiefly by comparing total fertility rates (TFRs) and total marital fertility rates (TMFRs) from the 1973 National Demographic Survey (NDS) and the 1978 Area Fertility Survey (AFS). According to the 1973 NDS, the TFR for the five-year period from 1968 to 1972 (centered on 1970) was 5.89 children per woman of reproductive age. The 1978 AFS established a TFR of 4.66 for 1977, indicating a decline of 21 percent. Corresponding TMFRs were 9.63 and 9.22 per married woman of childbearing age, indicating a decline of only four percent.

The supposition here is that marital fertility has remained essentially unchanged while overall fertility has declined and that, therefore, the family planning program cannot be credited with more than a marginal contribution. There are several problems with this line of analysis, beginning with the noncomparability of the NDS and AFS data. The NDS was administered to a nationally representative sample, whereas the five regions covered by the 1978 AFS (one of a series of four fertility surveys conducted in selected regions of the Philippines between 1977 and 1980) represent only 44 percent of the national population.

The authors defend the treating of the AFS population as representative of the total population with a circular explanation that does not address the fundamental question of representativeness. They cite a report that has not been formally published[1] as providing the basic justification for the use of the AFS regions as a national sample, then say that in an effort to add more precision, some elaborate weighting procedures were explored, "but the results did not differ substantially from the unweighted totals. To avoid the appearance of claiming additional significance for the results by statistical mystification, we decided to employ the unweighted all-region totals as proxies for national sample data in this report" [p. 18]. The authors' stated concern about misleading the reader by using weighted data did not prevent them from mislabeling tables of AFS data as referring to the Philippines as a whole, or from extrapolating about national trends using this unrepresentative sample.

The reliance on AFS data for drawing nationwide conclusions is unnecessary, since nationally representative data were obtained in the Republic of the Philippines Fertility Survey (RPFS), also conducted in 1978. The book barely mentions the RPFS, and then only in the concluding chapter, where the authors cite RPFS data to demonstrate that the AFS findings are similar.

The findings from the AFS and the RPFS regarding 1977 TFRs and TMFRs are indeed similar, but they are by no means identical. According to the RPFS, the TFR declined to 4.96 in 1977, and the TMFR, to 9.10. These figures indicate a decline in the TFR between 1970 and 1977 of 16 percent, and a decline in the TMFR of six percent. Thus, they support the conclusion of a greater decline in the TFR than in the TMFR, but attribute a greater proportion of the fertility decline to changes in marital fertility than do the AFS findings. Even granting the similarity of the findings from the two surveys, the question remains: Why analyze national trends using AFS data?

The authors also pay insufficient attention to the question of the validity of making comparisons between 1977 fertility data and data from the five-year NDS period centered on 1970. Retrospective fertility data are susceptible to date misplacement biases during the years immediately preceding the survey. As a result, the most valid data from other surveys for comparison with the NDS figures are likely to be five-year averages centered on 1975. Thus calculated, the 1975 TFR from the AFS is 4.68 and from the RPFS, 5.20. In comparison with the 1970 NDS figure, this represents a decline of 21 and 12 percent, respectively. The 1975 TMFR is 8.54 according to the AFS and 8.86 as calculated from the RPFS data. This is a decline of 11 and eight percent, respectively. Even according to the AFS data, marital fertility accounts for more than half of the decline, and according to the RPFS data, it accounts for two-thirds of the decline.

So the 1975 data, especially from the RPFS, seriously undermine the conjecture that marital fertility has remained essentially unchanged. If the apparent increase in marital fertility between 1975 and 1977 (indicated by both the AFS and the RPFS) is correct, it would indicate a decline in family planning program performance during the mid-1970s. But it would not negate the evidence of a substantial effect during the early 1970s.

Apart from the question of the internal validity of annual fertility trends based on retrospective survey data, there is reason to suspect upward bias in the total marital fertility rate as well. It has been consistently observed in fertility surveys in the Philippines that younger, recently married women have a tendency to identify themselves as single, apparently to avoid being interviewed about fertility-related matters. This practice is likely to bias marital fertility rates for younger women upward, since the women most likely to avoid being identified as married are those who do not yet have children. This bias is likely to affect rates for the year or two immediately preceding the survey much more than it does rates for earlier years.

Census data are not as greatly affected by this bias as survey data and can, therefore, be used to gauge the extent of underreporting of marriage. Data from the 1975 and 1980 censuses indicate that the proportion of women aged 15–19 who were married rose from 12 to 14 percent, and the proportion married among those aged 20–24 rose from 48 to 53 percent. The proportions reported married in these two age-groups were six percent and 41 percent, respectively, in the AFS, and seven percent and 39 percent in the RPFS. With differences of this magnitude, the age-specific marital fertility rates from either survey for these age-groups are likely to have been inflated as well. If so, the effect on the TMFR would have been disproportionate, since each age-group is weighted equally in TMFR calculation, whereas the numbers of married women in these age-groups are much lower than average.

The discussion of direct determinants of fertility does not mention two major proximate determinants, lactation and abortion, presumably because data are lacking. The authors derive the effects of age composition and marriage pattern on fertility by inference from the observed trends and differentials in these two variables. The relationship between contraceptive practice and fertility correlates current contraceptive prevalence with 1977 age-specific marital fertility rates for women aged 20–39. This analysis reveals consistently negative correlations between

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use of effective methods and TMFRs, averaging −0.42. The fertility effects of the indirect determinants are studied by cross-classification with number of children ever born; the analysis is controlled for age. It reveals, as expected, that fertility is negatively associated with education, income, high-status occupations, other indicators of high socioeconomic status and residence in an extended household.

In the concluding chapter, the authors present a multivariate analysis of the effects of both direct and indirect variables on the number of children ever born. This exercise is marred by an attempt to include current family planning practice as an independent variable, despite this factor's obvious irrelevance to past childbearing. Since the couples most likely to practice contraception are those whose fertility has been high, current contraceptive practice is found to have a positive association with number of children ever born. The authors do not comment on the methodological shortcomings of this analysis, nor do they attempt to interpret the positive relationship, despite its inconsistency with the negative relationship previously found between use of effective methods and age-specific marital fertility.

A general lack of concern with methodological issues pervades the book and affects the quality of analysis and interpretation at several other points, too. For example, the authors give no information on the number of survey respondents, although they cite the number of households sampled. Nor is there any information on the extent of sample loss, and how this problem was handled. Second, the authors find an increase of 1.9 years in the singulate mean age at marriage since 1970 (from 22.8 to 24.7) by comparing 1978 AFS data with 1970 census data. That this increase over seven years is nearly three times the increase during the 22 years from 1948 to 1970 should invite some concern that the finding is artifactual and due to the tendency to underreport marriage. However, the increase is given as fact, although comparison of the 1970 and 1980 census data indicates a net decline in the singulate mean age at marriage during the 1970s. Third, the authors attach considerable significance to data from the 1977 and 1978 rounds of the AFS that reveal a substantial increase between the two survey dates in the use of rhythm, withdrawal and abstinence. Though they admit that the increase may be due "in part" to a modification of the questionnaire between the two surveys, it is likely that nearly all of the increase is due to this change, which was made expressly to adjust for suspected underreporting of the use of these three methods. Furthermore, the authors state that the modification did not refer to the rhythm method, whereas in fact it did.

The findings presented in *Demographic Responses to Development* are not only methodologically flawed, but also out of date. The RPFS country report was published in December 1979,[2] more than five years earlier than this analysis , and a volume of second-stage analysis was published in 1984.[3] Since 1978, there have been two more rounds of the AFS, and final reports for each were written and circulated long ago in the Philippines. A new national demographic survey was conducted in 1983; a preliminary report from that survey was issued in March 1984.[4]

Consequently, there is little in this report that has not been superseded by new data and new analyses. It is sad to think that this book, because of its publication in the United States, will probably be more widely read than the more accurate, relevant and timely reports published in the Philippines.

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ORAL CONTRACEPTIVE (O.C.) AGENTS

Indications Prevention of pregnancy. *DOSE-RELATED RISK OF THROMBOEMBOLISM*: Because studies have shown a positive association between OC estrogen dose and risk of thromboembolism, it is prudent to minimize estrogen exposure. Prescribe an OC with the least amount of estrogen compatible with an acceptable pregnancy rate and patient acceptance. Start new users on OCs containing 0.05 mg or less of estrogen.

Contraindications 1. Known or suspected pregnancy (see Warning #5). 2. Thrombophlebitis or thromboembolic disorders. 3. Past history of deep vein thrombophlebitis or thromboembolic disorders. 4. Undiagnosed abnormal genital bleeding. 5. OCs should not be used by women who have or have had any of the following: a. cerebral vascular or coronary artery disease, including myocardial infarction; b. known or suspected carcinoma of the breast; c. known or suspected estrogen dependent neoplasia; d. benign or malignant liver tumor that developed during use of OCs or other estrogen containing products.

> **WARNINGS: Cigarette smoking increases the risk of serious cardiovascular side effects from OC use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use OCs should be strongly advised not to smoke.**
>
> The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems*: An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective case-control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS: Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI): Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S., so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE: Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg, but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK: Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES: A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34–5/100,000; ages 35-44–33/100,000; ages 45-49–140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34–1/6700 for nonsmokers and 1/2000 for smokers; ages 45 and over–1/2500 for nonsmokers and 1/500 for smokers. Risk appeared to increase with parity but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth, except for OCs in women over 40 who smoke. (Rates given for pill only smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS—RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40 +
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C,D	C
Nonsmokers (other predisposing conditions)	C	C,B	B,A

A–Use associated with very high risk
B–Use associated with high risk
C–Use associated with moderate risk
D–Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions*: Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden, or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma*: Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case-control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors*: Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen". The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring*: Use of female sex hormones—estrogenic and progestational agents—during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1:1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case-control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1/1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective, and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease*: Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects*: Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure*: An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences," or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache*: Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities*: Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility*: There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy*: Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding*: OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast-fed child have not been determined. If feasible, defer OC use until the infant has been weaned.

Precautions *GENERAL*: 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. DRUG INTERACTIONS: OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS*: See Warnings. *PREGNANCY*: Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS*: See Warnings.

Adverse Reactions An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hemorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package Insert)

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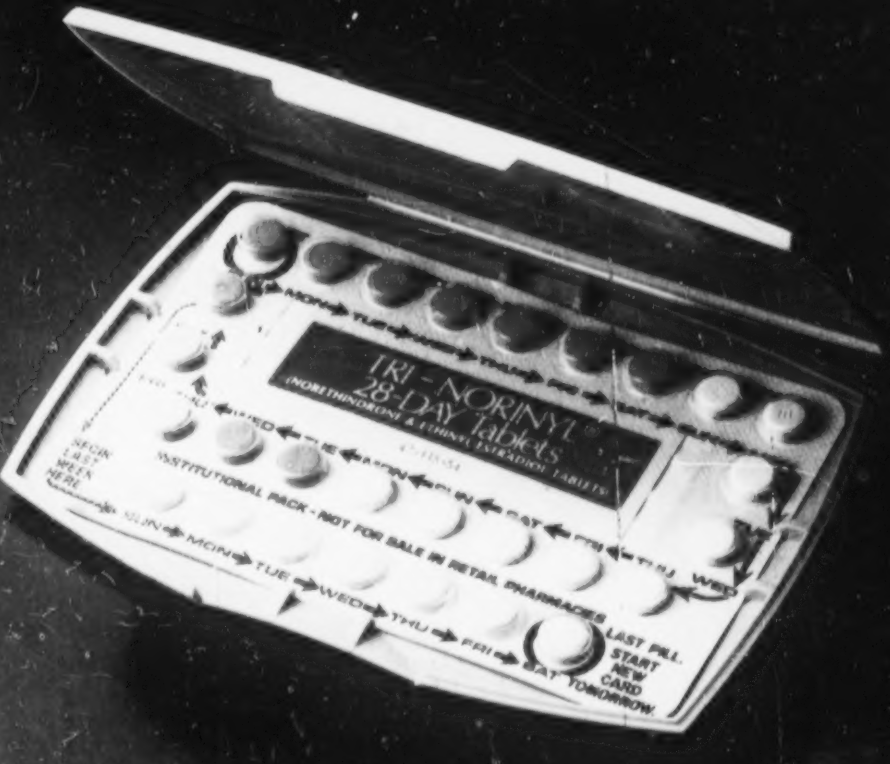
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Family Planning Perspectives

Volume 18, Number 6, November/December 1986

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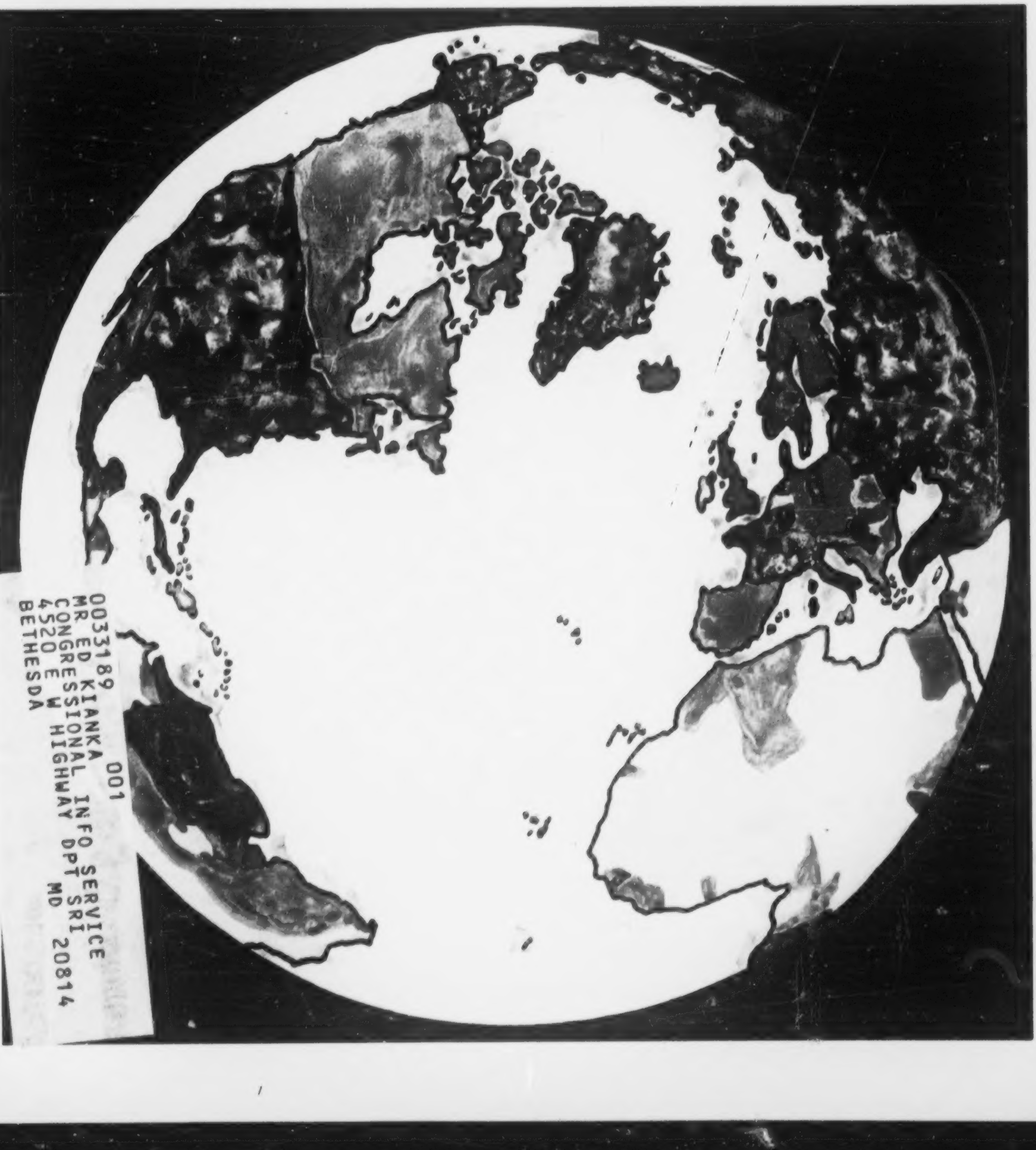

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DESCRIPTION

Loestrin Products are progestogen-estrogen combinations.

INDICATIONS AND USAGE

Loestrin Products are indicated for the prevention of pregnancy in women who elect to use oral contraceptives.

In clinical trials with Loestrin 1/20 involving 15,899 therapy cycles, there was a pregnancy rate of 0.75 per 100 woman-years; in clinical trials with Loestrin 1.5/30 involving 17,139 cycles, there was a pregnancy rate of 0.49 per 100 woman-years.

Dose-related risk of thromboembolism from oral contraceptives: Studies have shown a positive association between the dose of estrogens in oral contraceptives and the risk of thromboembolism. It is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The oral contraceptive prescribed for any given patient should be that product which contains the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance.

CONTRAINDICATIONS

1. Thrombophlebitis or thromboembolic disorders.
2. A past history of deep-vein thrombophlebitis or thromboembolic disorders.
3. Cerebral vascular or coronary artery disease.
4. Known or suspected carcinoma of the breast.
5. Known or suspected estrogen-dependent neoplasia.
6. Undiagnosed abnormal genital bleeding.
7. Known or suspected pregnancy (See No. 5 under WARNINGS).
8. Benign or malignant liver tumor which developed during the use of oral contraceptives or other estrogen-containing products.

WARNINGS

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with the use of oral contraceptives is well-established. Studies have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic.

Cerebrovascular disorders: In a collaborative study in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than nonusers, and the risk of thrombotic stroke was 4.0 to 9.5 times greater.

Myocardial infarction: An increased risk of myocardial infarction associated with oral contraceptives has been reported confirming a previously suspected association. These studies found that the greater the number of underlying risk factors (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) for coronary artery disease, the higher the risk of developing myocardial infarction, regardless of whether the patient was an oral contraceptive user or not. Oral contraceptives, however, were found to be a clear additional risk factor.

It has been estimated that users who do not smoke (smoking is considered a major predisposing condition to myocardial infarction) are about twice as likely to have a fatal myocardial infarction as nonusers who do not smoke. Oral contraceptive users who are smokers have about a fivefold increased risk of fatal infarction compared to users who do not smoke, but about a tenfold to twelvefold increased risk compared to nonusers who do not smoke. The amount of smoking is also an important factor.

Risk of dose: In an analysis of data, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in oral contraceptives; however, the quantity of estrogen may not be the sole factor involved.

Persistence of Risk: In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of oral contraceptive use for cerebrovascular disease and 9 years for myocardial infarction. In addition, a prospective study suggested the persistence of risk for subarachnoid hemorrhage.

Estimate of excess mortality from circulatory diseases: The risk of diseases of the circulatory system is concentrated in older women, in those with a long duration of use, and in cigarette smokers.

A study of available data from a variety of sources concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of oral contraceptives in women over 40 who smoke.

The risk of thromboembolic and thrombotic diseases associated with oral contraceptives increases with age after approximately age 30 and, for myocardial infarction, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia, and especially by cigarette smoking.

The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders. Should any occur or be suspected, the drug should be discontinued immediately.

A fourfold to sixfold increased risk of postsurgery thromboembolic complications has been reported in users. If feasible, oral contraceptives should be discontinued at least four weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization.

2. *Ocular lesions.* Neuro-ocular lesions, such as optic neuritis or retinal thrombosis, have been associated with the use of oral contraceptives. Discontinue the oral contraceptive if there is unexplained sudden or gradual, partial, or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions.

3. *Carcinoma.* Long-term continuous administration of estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver.

In humans, an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women has been reported. However, there is no evidence suggesting increased risk of endometrial cancer in users of conventional combination or progestogen-only oral contraceptives.

Studies found no evidence of increase in breast cancer in women taking oral contraceptives; however, an excess risk in users with documented benign breast disease was reported.

There is no confirmed evidence of an increased risk of cancer associated with oral contraceptives. Close clinical surveillance of users is, nevertheless, essential. In cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer, or who have breast nodules, fibrocystic disease, or abnormal mammograms, should be monitored with particular care.

4. *Hepatic Tumors.* Benign hepatic adenomas have been found to be associated with oral contraceptives. Because hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage, they should be considered in women presenting abdominal pain and tenderness, abdominal mass, or shock.

A few cases of hepatocellular carcinoma have been reported in women taking oral contraceptives. The relationship of these drugs to this type of malignancy is not known at this time.

5. *Usage in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* During early pregnancy, female sex hormones may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. Although there is no evidence at the present time that oral contraceptives further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use oral contraceptives instead of other methods of contraception.

An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of oral contraceptives in pregnancy.

In the past female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective for these uses.

There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing oral contraceptives.

Pregnancy should be ruled out before continuing an oral contraceptive in any patient who has missed two consecutive menstrual periods. If the patient has not adhered to the schedule, the possibility of pregnancy should be considered at the time of the first missed period, and oral contraceptives should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed.

Women who discontinue oral contraceptives with the intent of becoming pregnant should use an alternate form of contraception for a period of time before attempting to conceive.

Administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy.

6. *Gallbladder Disease.* Studies report an increased risk of surgically confirmed gallbladder disease in users of oral contraceptives.

7. *Carbohydrate and Lipid Metabolic Effects.* Because decreased glucose tolerance has been observed in a significant percentage of patients, prediabetic and diabetic patients should be carefully observed while receiving oral contraceptives.

An increase in triglycerides and total phospholipids has been observed.

8. *Elevated Blood Pressure.* An increase in blood pressure has been reported in patients receiving oral contraceptives. The prevalence in users increases with longer exposure. Age is also strongly correlated with development of hypertension. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure.

9. *Headache.* Onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of oral contraceptives.

10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and amenorrhea are frequent reasons for patients discontinuing oral contraceptives. In breakthrough bleeding, nonfunctional causes should be borne in mind. In undiagnosed abnormal bleeding from the vagina, adequate diagnostic measures are indicated to rule out pregnancy or malignancy.

Women with a past history of oligomenorrhea or secondary amenorrhea, or young women without regular cycles should be advised that they may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of oral contraceptives.

11. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures.

12. *Breast Feeding.* Oral contraceptives may interfere with lactation. Furthermore, a small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs.

PRECAUTIONS

1. A complete medical and family history should be taken prior to the initiation of oral contraceptives. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen, and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, oral contraceptives should not be prescribed for longer than one year without another examination.
2. Preexisting uterine leiomyomata may increase in size.
3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree.
4. Oral contraceptives may cause fluid retention and should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated.
5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice. If jaundice develops, the medication should be discontinued.
6. Steroid hormones may be poorly metabolized and should be administered with caution in patients with impaired liver function.
7. Users may have disturbances in normal tryptophan metabolism, which may result in a relative pyridoxine deficiency.
8. Serum folate levels may be depressed.
9. The pathologist should be advised of oral contraceptive therapy when relevant specimens are submitted.
10. Certain endocrine and liver function tests and blood components may be affected:

(a) Increased sulfobromophthalein retention. (b) Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. (c) Increased thyroid-binding globulin (TBG) leading to increased circulating total thyroid hormone. (d) Decreased pregnanediol excretion. (e) Reduced response to metyrapone test.

Drug interactions: Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with oral contraceptives: Thrombophlebitis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gallbladder disease, benign hepatomas, congenital anomalies.

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed: Mesenteric thrombosis, neuro-ocular lesions, eg, retinal thrombosis and optic neuritis.

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: gastrointestinal symptoms; breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; amenorrhea during and after treatment; temporary infertility after discontinuance of treatment; edema; chloasma or melasma; breast changes; change in weight; change in cervical erosion and cervical secretion; possible diminution in lactation when given immediately postpartum; cholestatic jaundice; migraine; increase in size of uterine leiomyomata; rash (allergic); mental depression; reduced tolerance to carbohydrates; vaginal candidiasis; change in corneal curvature; intolerance to contact lenses.

The following adverse reactions have been reported and the association has been neither confirmed nor refuted: Premenstrual-like syndrome; cataracts; changes in libido; chorea; changes in appetite; cystitis-like syndrome; headache; nervousness; dizziness; hirsutism; loss of scalp hair; erythema multiforme; erythema nodosum; hemorrhagic eruption; vaginitis; porphyria.

Special Notes on Administration

Loestrin **21**—Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after discontinuing medication.

Loestrin **Fe**—Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after the brown ferrous fumarate tablets have been started.

Because of the relatively low estrogenic content, Loestrin (norethindrone acetate and ethinyl estradiol tablets, USP) is not a good cyclic regulator. There are patients whose inherent hormone balance will require larger amounts of estrogen than that contained in Loestrin to achieve cyclic regularity. These patients experience altered bleeding patterns, which do not conform to treatment schedules. It is important that patients adhere to the dosage schedule regardless of when bleeding occurs.

The physician should be alert to the fact that the irregular bleeding patterns could mask bleeding from organic cause, and appropriate diagnostic measures should be taken if the bleeding persists or continues after changing to a higher estrogen-content product.

After several months, bleeding may be reduced to a virtual absence; reduced flow may be a result of medication and not indicative of pregnancy.

HOW SUPPLIED

Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets; each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol, each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol, each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

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Caution—Federal law prohibits dispensing without prescription.

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Induced Abortion: A Worldwide Perspective

By Stanley K. Henshaw

Laws and Policies

Today, 76 percent of the world's people live in countries where induced abortion is legal, at least for health reasons; and 39 percent reside in nations where abortion is available upon request. The procedure is legal in nearly every developed country, and although a majority of developing countries prohibit abortion, 67 percent of the residents of the developing world live in countries where it is permitted at least for health reasons. The other 33 percent—more than one billion people, most of them living in Sub-Saharan Africa, Latin America and the more strongly fundamentalist Islamic nations—have little or no access to legal induced abortion.

Although many women around the world are unable to obtain legal abortions when they need them, the current world situation differs considerably from conditions prevailing 50 years ago, when nearly every nation outlawed abortion. The first definitive steps toward the legalization of abortion were taken in Northern Europe during the 1930s and gained momentum in the years following World War II, when the socialist nations of Eastern and Central Europe (with the exception of Albania) adopted laws permitting first-trimester abortions either at the woman's request or on the basis of broadly interpreted social indications. Many other developed countries, including the United States, followed suit in the 1960s and 1970s. By the beginning of 1986, induced abortions could be legally obtained for health reasons in North America and in every European country except Belgium, Ireland and Malta. Although in many of these nations certain restrictions apply to the provision of abortion, especially in the second trimester, almost any woman who wants one can get a legal first-trimester abortion. Thus, the legalization of abortion in the United States can be viewed as part of a trend toward liberalization of abortion laws throughout the industrialized world.

This trend, which is occurring in developing as well as developed countries, has continued up to the present, as abortion laws have been relaxed in five more countries within the past four years—Greece, Portugal, Spain, Taiwan and Turkey. During the same period, women's access to legal abortion has been significantly reduced only in Romania (in 1984). That nation's population policy also restricts the availability of modern contraceptive methods and authorizes the investigation of all women who experience miscarriages. In addition, the Irish constitution was amended in 1985 to prevent any future liberalization of its highly restrictive abortion law.

Motivations for changes in abortion laws have varied widely, from considerations of public health, social justice and women's rights to concern about rapid rates of population growth. This last factor was an explicit reason for the adoption of liberal abortion laws in Japan and Tunisia. Of the few countries that have made their abortion policies stricter, most appear to have been motivated by a desire to increase fertility. For example, Romania changed its policy in 1984 for that reason; abortion is permitted only for women who have four or more children, who are over 45, who are the victims of rape or incest or who have medical reasons for seeking an abortion. (Although these restrictions were in effect prior to 1984, they were not strictly enforced.) The prospect of a dwindling work force encouraged the governments of Bulgaria, Czechoslovakia and Hungary to restrict abortion between 1961 and 1974, although Czechoslovakia has recently liberalized its law. On the other hand, abortion laws were relaxed in some Western European nations where there is much concern over low fertility, such as France and West Germany.

The only instance since 1945 in which a liberal abortion law was completely reversed occurred for religious reasons in Iran, when the country's revolutionary Islamic government replaced a newly liberalized abortion law with one that is extremely restrictive. However, other branches of Islam are generally less opposed to abortion, and abortion laws have been relaxed in several of the more modern Islamic countries, notably Tunisia and Turkey.

Although most developing countries prohibit abortion, the two largest, China and India, liberalized their laws in 1957 and 1971, respectively. In Sub-Saharan Africa, such nations as Burundi, Ghana, Rwanda, Zambia and Zimbabwe have eased some of the restrictions that they inherited from the colonial period. Only a few Latin American countries have changed the restrictive laws that were enacted in the 19th century. However, even in countries where abortion is prohibited without exception, implicit provisions of statutes or general principles of criminal law in most, if not all, cases permit abortion to save the life of a pregnant woman.

Actual abortion practice sometimes deviates from the provisions of statutory law. In Belgium, for example, a network of nonprofit clinics openly performs abortions, despite the fact that the procedure is illegal. Similarly, clinics and physicians in some areas of Latin America and elsewhere who provide large numbers of abortions are tolerated by the government.

Incidence

Approximately 33 million legal abortions are performed in the world each year. China and the Soviet Union are the two nations in which the most abortions are performed annually—about 14 million and 11 million, respectively. However, because of uncertainty about the reliability of the statistics for these two countries, the total number of legal abortions performed in a year might be as low as 30 million or as high as 40 million. Adding the estimated

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number of illegal abortions* to this number would increase the world total to between 40 and 60 million abortions per year. Thus, the abortion rate worldwide is probably between 37 and 55 abortions per 1,000 women aged 15–44, if illegal procedures are included. The abortion ratio (the proportion of all pregnancies, excluding miscarriages, that are terminated by induced abortion) probably ranges from 24 to 32 abortions per 100 known pregnancies.†

Table 1 (page 252) shows legal abortion rates and ratios for all countries that publish meaningful abortion statistics, plus certain countries for which other data sources are available. Most of the data are based on official reports of the number of abortions performed according to the laws of the particular country. In some cases, these data have been supplemented with information from secondary sources, and some of the data shown are preliminary. For countries marked with asterisks, data are believed to be inaccurate by at least 20 percent (usually undercounted) or to be of questionable accuracy.

As the table illustrates, the highest abortion rate found among developed countries is the Soviet Union's (estimated at 181 abortions per 1,000 women aged 15–44). Romania has the next highest abortion rate (91 per 1,000), but a large proportion of abortions there are illegal. It is followed by Yugoslavia and Bulgaria (71 and 62 per 1,000, respectively). Other countries with somewhat elevated abortion rates are Greenland, Hungary and Czechoslovakia (45, 37 and 35 per 1,000). The officially reported abortion rate in Japan is about 22 abortions per 1,000, but many believe this figure to be a substantial undercount of the incidence of abortion there. Estimates made by a Japanese analyst in 1975 indicate an abortion rate of 84 per 1,000. The high level of recourse to abortion in some countries may be traced to the scarcity of modern contraceptives—oral contraceptives are in short supply in Eastern Europe and are not approved in Japan.

While the U.S. abortion rate is lower than that found in any of the Eastern European countries or in Japan (at least unofficially), it is higher than are abortion rates in most other developed countries. In 1983, there were about 27 abortions per 1,000 U.S. women 15–44 years of age; this rate is five times the abortion rate seen in the Netherlands (below six per 1,000), and more than twice the level observed in England and Wales (13 per 1,000) and in Canada (also about 13 per 1,000). Scandinavian countries such as Denmark, Norway and Sweden also have substantially lower abortion rates (18, 16 and 18 per 1,000, respectively). While the official abortion rate in Italy is 19 per 1,000, the actual rate may be similar to that of the United States when illegal and unreported abortions are included.

Among the developing countries, China appears to have the highest legal abortion rate (62 abortions per 1,000 women aged 15–44), but this figure may be inflated. In Cuba, the rate is about 59 per 1,000; in Singapore, it is estimated at 28 per 1,000. However, other countries may have abortion rates that are equally high or even higher when illegal abortions are considered. For instance, a recent study in Bangladesh indicates that as many as 780,000 illegal abortions are performed there each year,[1] in addition to the 69,000 reported legal menstrual regulations. These figures would suggest that the overall abortion rate in Bangladesh (including both legal and illegal abortions) is between 35 and 45 per 1,000.

The abortion ratios shown in Table 1 indicate the proportion of all pregnancies that end in induced abortion. The highest ratio is that of the Soviet Union, where it appears that up to 68 percent of all pregnancies are terminated by abortion. The abortion ratio is also high in Romania (57 percent) and in Japan, where unofficial data from 1975 indicate a ratio of 55 percent. Other nations with abortion ratios close to 50 percent include Yugoslavia (49 percent), Bulgaria (48 percent), Cuba (46 percent), China (43 percent) and Hungary (41 percent).

In the United States, 29 percent of all pregnancies end in abortion (25 percent if the estimated number of miscarriages is considered), a level similar to those of Denmark, East Germany and Italy, at least according to official statistics. A handful of countries have abortion ratios under 15 percent—Canada, Iceland, the Netherlands, New Zealand, Scotland and Tunisia.

Table 1 also shows total abortion rates for some of the countries. (This measure represents the number of abortions that 1,000 women could expect to have during their reproductive lives, given present abortion rates.) Although exact data are unavailable, the Soviet Union probably has the highest total abortion rate of any developed country—perhaps as high as 4,000 per 1,000 women, or an average of about four lifetime abortions per woman. Czechoslovakian and Hungarian women have total abortion rates of 1,005 and 1,044 abortions per 1,000 women, respectively; that is, there would be one abortion per woman, on average. The U.S. total abortion rate is 787 per 1,000, signifying that every 1,000 U.S. women would have 787 abortions during their reproductive years. These rates are around 500 per 1,000 for women in Denmark, Norway and Sweden, and are close to 250 per 1,000 women in Canada, New Zealand and Scotland.

In general, the trend in abortion rates in the United States has followed a pattern similar to that found in other developed countries—that is, a rising incidence of abortion in the first years after the lifting of restrictions, followed by stabilization. In some countries that have exhibited such a trend (especially in Scandinavia), abortion rates have declined in the recent past. The Danish rate, for example, fell by 32 percent between 1975, when its rate was almost the same as the 1983 U.S. rate, and 1984. Thus, it is possible for abortion rates to decline in the absence of restrictive policies.

Levels of contraceptive practice and the types of methods used can have important effects on a country's abortion rate. In England and Wales and in the Netherlands, abortion rates increased in the year or so after widespread publicity was given to the potential health problems associated with pill use. In addition, voluntary sterilization for contraceptive purposes is undoubtedly an important factor in holding down abortion rates among women over age 35.

Restrictions on the locations in which abortions may be performed and other limitations on abortion availability appear to have had only a minor impact on overall abortion rates. There is substantial evidence to demonstrate that if restrictions are especially stringent in one country, women will travel to a neighboring country where abortion is more freely available. For example, since 1975, about 30,000 women have traveled each year to England and Wales to obtain abortions. When the procedure was less accessible in France, Italy and West Germany than is now the case, many of the women came from those countries; recently, abortion patients have come increasingly from Ireland and Spain. Indeed, when abortions obtained by Irish women who travel to England are considered, the Irish abortion rate is equal to that of the Netherlands, even though Ireland has one of the most restrictive abortion laws and the Netherlands, one of the most liberal.

Demographic Characteristics

Women can have abortions at any stage in their reproductive lives, and the age distributions of abortion patients tend to differ greatly from country to country. In Western Europe and North America, induced abortion is most commonly obtained by young women. For example, about 27 percent of women who obtain abortions in the United States are teenagers, a level comparable to that observed in Canada (24 percent), England and Wales (28 percent), Finland (23 percent), Norway (24 percent) and Scotland (29 percent). Young women in some other European countries, however, are less likely to have abortions: Only 17 percent of abortion patients in Denmark are teenagers, as are 15 percent in the Netherlands and 11–12 percent in Hungary, West Germany and France.

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*The number of illegal abortions has been estimated for various areas of the world on the basis of hospital admissions for septic abortions, surveys of women, surveys of providers of illegal abortions and the judgments of local observers. Thus, there is a large margin of error in these data.

†Legal abortions plus live births that occurred six months later.

Table 1. Number of abortions, abortion rate, abortion ratio and total abortion rate, selected countries

Country	No. of abortions	Abortion rate	Abortion ratio	Total abortion rate
Australia (1984)	54,600	15.2	18.5	u
Bangladesh*,† (1984–1985)	88,600	3.4	1.5	u
Bulgaria (1984)	113,500	61.9	48.1	u
Canada‡ (1984)	62,300	10.2	14.2	288
§ (1982)	77,500	13.0	17.2	u
China* (1983)	14,371,800	61.5	43.1	u
Cuba (1984)	139,600	58.6	45.9	u
Czechoslovakia (1984)	113,800	34.5	33.8	1,005
Denmark (1984)	20,700	18.4	28.6	534 (1983)
England & Wales‡ (1984)	136,400	12.8	17.3	367
Finland (1983)	13,400	12.1	16.8	362
France*,** (1984)	177,000	14.9	18.9	u
Germany, East†† (1984)	96,200	26.6	29.7	708 (1976)
Germany, West*,‡‡ (1984)	97,900	7.3	14.4	u
Greenland (1983)	580	44.7	37.1	u
Hong Kong (1984)	14,500	11.3	15.8	u
Hungary (1984)	82,200	37.1	40.9	1,044 (1983)
Iceland (1983)	690	12.9	14.0	u
India* (1980–1981)	388,400	2.7	0.2	u
Israel (1984)	18,900	21.9	16.1	u
Italy* (1984)	227,400	19.0	28.0	u
Japan*,§§ (1983)	567,500	21.5	27.2	u
(1975)	2,250,000	84.2	54.7	u
Netherlands‡ (1984)	18,700	5.6	9.7	161
New Zealand (1984)	7,300	9.7	12.4	272 (1983)
Norway (1984)	14,100	15.9	21.9	465
Poland*,*† (1984)	133,000	16.5	16.0	u
Romania*,*‡ (1983)	421,400	90.9	56.7	u
Scotland*§ (1984)	9,400	8.9	13.2	236 (1983)
Singapore* (1983)	19,100	28.1	32.0	792
South Africa*,*§ (1982)	1,000	0.2	0.1	u
Sweden (1984)	30,800	17.7	24.7	534
Tunisia (1985)	21,300	13.6	8.9	617 (1977)
USSR*,*** (1982)	11,000,000	181	68	u
U.S. (1983)	1,515,000	27.4	29.4	787 (1982)
Vietnam* (1980)	170,600	14.6	8.1	u
Yugoslavia (1984)	358,300	70.5	48.8	u

*Data are believed to be at least 20 percent inaccurate or are of unknown accuracy.

†Menstrual regulations only. ‡Residents only.

§Includes Canadian women who obtained abortions in the United States and at private clinics in Quebec.

**Provisional. ††Includes East Berlin.

‡‡Includes West Berlin; also includes West German women who obtained abortions in England and in the Netherlands.

§§Data for 1983 are most recent official government statistics; 1975 data are estimates made to account for suspected abortion underreporting.

*†Excludes abortions performed in physicians' offices.

*‡Includes illegal and spontaneous abortions treated by health care providers.

*§Includes women who obtained abortions in England.

***All data come from survey-derived abortion ratios (abortions per live births).

Note: Abortion rate is number of abortions per 1,000 women aged 15–44. Abortion ratio is number of abortions per 100 known pregnancies (abortions plus births that occurred six months later). Total abortion rate is number of abortions that would be experienced by 1,000 women during their reproductive lifetimes, given present age-specific abortion rates.

U.S. women aged 20–24 have higher abortion rates than do comparable women in any other developed countries with age-specific data.[*] The U.S. rate is 51 abortions per 1,000 20–24-year-olds, compared with 40–44 per 1,000 in Czechoslovakia and Hungary; 26–29 per 1,000 in East Germany, Sweden and Denmark; 18–20 in Canada and England and Wales; and 8–13 per 1,000 in the Netherlands and Scotland. A similar pattern is seen among teenagers: U.S. women aged 18–19 have abortions at a rate of 60 per 1,000; the next highest rate for that age-group, 38 per 1,000, is found among Hungarians. Similarly, the abortion rate among 15–17-year-old Americans is 30 per 1,000, whereas the next highest rate for that age-group is 18 per 1,000, also among Hungarians. The difference is especially great among 13–14-year-olds: The U.S. abortion rate—four per 1,000—is three times the level of the next highest rate.

Yet, despite these high abortion rates, U.S. teenagers 17 years of age or younger are less likely than teenagers in many other countries to terminate a pregnancy. Among pregnant 13–14-year-olds and 15–17-year-olds, about 40 percent of U.S. teenagers elect abortion, compared with nearly 90 percent of 13–14-year-olds in Denmark, Norway and Sweden, and two-thirds of Danish and Swedish 15–17-year-olds. The fact that American teenagers have a relatively high abortion rate but a medium abortion ratio reflects the very high rates of teenage pregnancies and births found in the United States.[2] In general, trends in teenage abortion rates in developed countries have followed those of older women—both declining or both remaining stable. Sweden represents one important exception: Between 1975 and 1984, the abortion rate among teenagers there fell 41 percent, while abortion rates among other women were virtually unchanged.

Age-specific abortion rates are highest among 18–19-year-olds in Canada, England and Wales, Finland, New Zealand, Norway and the United States. In Denmark, the Netherlands and Sweden, the rates are highest among 20–24-year-olds; in East Germany, the rate is highest among 25–34-year-olds; in Czechoslovakia, the peak abortion rate is found among 25–29-year-olds; and in Hungary, the rate peaks among 30–34-year-olds. Age-specific abortion ratios for selected countries reveal two distinct patterns. In a number of developed nations (among them Canada, England and Wales, the Netherlands, New Zealand, Norway, Scotland, Sweden and the United States), the abortion ratio follows a U-shaped pattern, decreasing from a higher level among teenagers to a low point among 25–29-year-olds; after that, the ratio climbs to its highest level among women 40 and older. In Czechoslovakia, on the other hand, the abortion ratio generally increases from the youngest age-group to the oldest; in Hungary, the ratio follows a comparable pattern, except that it is higher among teenagers than among 20–24-year-olds.

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[*] Age-specific rates are not available for the Soviet Union, the developed country with the highest overall abortion rate, nor are they available for Japan, so no comparison with these countries is possible.

In countries where most of the women who obtain abortions are childless, abortion is used primarily to postpone childbearing; in other nations, abortion is more often used by high-parity women who want no more children. Childless women have constituted the majority of all abortion patients in recent years in Canada, England and Wales, Finland, the Netherlands, New Zealand, Scotland and the United States, and they have represented the single largest subgroup in Denmark, Sweden and West Germany. In contrast, women with two previous births have represented the largest subgroup in Czechoslovakia, Hungary and Italy.

Parity-specific abortion ratios seem to follow three distinct trends. In Canada and the United States, for example, abortion ratios fall from a maximum among childless women to their lowest level among women with one previous birth; then after rising to a secondary peak among women with two or three previous births, the ratios slowly decline. The pattern in Finland and Sweden is the same at low parities, but there the maximum abortion ratio is seen among women with four previous births, and this level is considerably higher than the maximum found in Canada and the United States. In Hungary and Czechoslovakia, on the other hand, the abortion ratio is lowest among childless women, rises slightly at parity one, and then climbs steadily after that to a maximum among women with three previous births; in these countries, as in Finland and Sweden, the occurrence of the maximum abortion ratios among women of higher parity reflects the low level of reliance on surgical sterilization.

There are also major international differences in levels of abortion by marital status. In Czechoslovakia, Hungary and Italy, at least 70 percent of women obtaining abortions are married; in other nations, the proportion ranges from 50 percent in West Germany and 47 percent in France to 24 percent in Canada and 19 percent in the United States. The proportion of abortions obtained by married women has fallen in recent years in most of the developed countries for which data are available; only in Czechoslovakia, Hungary and Norway has it remained relatively stable (at around 80 percent, 70 percent and 40 percent, respectively).

Abortion ratios are generally very much higher among the unmarried than among the married. This difference is smaller in Norway and Sweden, probably because out-of-wedlock childbearing is more widely accepted there. In addition, there is a strong association between marital status and parity at the time of abortion. In the countries for which relevant data are available, a majority of married women who obtain abortions have previously given birth to two or more children, whereas most never-married women who have abortions are childless.

Ethnicity is also known to affect the incidence of abortion. In the United States, nonwhite women are between two and three times as likely to obtain abortions as are white women. For example, in 1982, the abortion rate among nonwhite women was 56 per 1,000, compared with 24 per 1,000 among white women; the comparable abortion ratios were 39 percent and 27 percent, respectively. In the Netherlands, about one-quarter of all women who obtained abortions were immigrants from such nations as Suriname, Turkey and the Netherlands Antilles. Their abortion rates are far higher than those of native Dutch women.

Provision of Abortion Services

In some countries, government policies limit the types of settings in which abortion procedures may be performed. For example, the federal abortion law in Canada permits abortions only in approved hospitals that have abortion committees, which must review and approve a woman's request for an abortion. Bulgaria, Czechoslovakia, Denmark, East Germany, Finland, France, Hungary, New Zealand, Romania and the Soviet Union also permit abortions to be performed only in hospitals. In Sweden, the vast majority are done in hospitals, but some abortions are performed by gynecologists with special permission to carry out the procedure in their offices.

In such countries as the Netherlands, the United States and West Germany, abortions may be performed in physicians' offices or clinics. But the distinction between a hospital and a clinic differs from country to country, and in some countries it is possible for providers closely resembling clinics to satisfy the legal definition of hospital and thus provide abortion services. In England and Wales, for example, all facilities that perform abortions are considered to be hospitals for administrative purposes, but several such facilities that primarily perform abortions are run like clinics.

In other countries, a number of restrictions formulated to prevent the commercialization of abortion services have had the effect of limiting the establishment of clinics. In France and Italy, for example, abortions may not constitute more than 25 percent of the surgical procedures performed in any one facility. Other countries forbid the advertising of abortion services or the provision of services to foreign women, and limit prices as well.

In the United States, on the other hand, many facilities are operated for profit, and advertising is common. Over 80 percent of the abortions performed in the United States are done in clinics or in physicians' offices, a higher proportion than in any other country; even most in-hospital abortions are performed on an outpatient basis. This was not always the case; in 1973, the first year during which abortion was legal nationwide, 52 percent of legal abortions took place in hospitals. Nevertheless, one reason for the rapid growth of abortion clinics in the United States was the inadequate response of traditional health care providers to the change in the legal status of abortion. Most hospitals have never provided abortions; in 1982, only 26 percent of non-Catholic, short-term general hospitals and 16 percent of public hospitals did so.

In countries where out-of-hospital abortions are permitted, increasing proportions are performed in clinics or doctors' offices. In West Germany, for example, the proportion of abortions that are provided outside of hospitals increased from 15 percent in 1977 to 57 percent in 1984. Even where hospital abortions are mandated, there has been an almost universal trend toward performing hospital abortions as outpatient procedures. In Sweden, the proportion of outpatient abortions rose from 16 percent in 1971 to 83 percent in 1983.

Hungary is the only European nation that requires all abortion patients to stay in the hospital overnight; 82 percent stay only one night. In West Germany, 19 percent of all abortions performed in 1984 involved a hospital stay of four days or more, and the average duration of hospitalization among women who had suction curettage abortions was four days.

Nonhospital abortions, which are less expensive than hospital procedures, tend to be more common in countries where cost is an important consideration in the provision of health care, as is the case in the United States. In some countries with national health plans, physicians and administrators have little incentive to reduce the cost of services, and the traditional practice of providing abortions in hospitals continues.

Abortion services usually are financed by the same mechanisms, generally public or semipublic, that fund other types of medical care. Most or all abortions, therefore, are provided at little or no charge to the patient. In Denmark, East Germany, Italy, the Netherlands and Norway, all or almost all abortions are provided without charge. Abortions are covered by national health plans in Australia, Bulgaria, Canada, Sweden and West Germany, but small copayments are usually or sometimes required. In such countries as England and Wales, New Zealand, Poland and Scotland, women have access to free abortion services, but they also have the option of paying for private services. Private services may offer advantages in timeliness, proximity, reduced red tape and range of services offered. Austria and Switzerland pay only for abortions required for medical reasons. The United States is the only country in which the national policy is to virtually exclude abortion from coverage in publicly financed health insurance programs.

Health Issues

The high levels of mortality and morbidity associated with illegal abortion spurred many countries to liberalize their abortion laws. Indeed, in many nations that legalized the procedure, abortion-related mortality declined dramatically. For example, in Czechoslovakia and Hungary, which liberalized their restrictive laws in the 1950s, abortion-related mortality rates fell by 56 percent and 38 percent, respectively, between 1953–1957 and 1958–1962. No country in Europe or North America experienced a decline of that magnitude during the 1950s and early 1960s without the legalization of abortion. The number of deaths associated with abortion in the United States fell considerably after the 1950s, and much of this decline was in the category of illegal abortions.[3]

Mortality is high in countries where large numbers of illegal abortions are performed by nonmedical personnel, as is the case in much of Latin America. In some countries, mortality from illegal abortion makes up a large proportion of all maternal mortality, and abortion complications account for as many as half of all admissions to the obstetric units of hospitals. A study in Bangladesh has estimated that 7,800 deaths each year are attributable to complications of illegal induced abortions.[4] The impact of abortion laws on mortality is illustrated by Romania, where the enactment of a restrictive abortion law in 1966 was followed by a sevenfold increase in deaths due to abortion: The abortion mortality rate per million women aged 15–44 rose from 14.3 in 1965 to 97.5 in 1978.

Some countries that restrict abortion nevertheless tolerate the practice, and abortions are performed by medically trained personnel using modern equipment. In such circumstances, the procedure can be relatively safe. Where abortion is legal, it has proved to be quite safe, with much lower mortality rates than those associated with childbearing. Abortion-related mortality rates in the United States and some other countries are now below one death per 100,000 abortions. Data from the United States demonstrate that abortion-related mortality declined substantially between 1972–1976 and 1977–1981—from 2.6 deaths per 100,000 abortions to 0.8 per 100,000. In contrast, levels of mortality attributed to pregnancy and childbirth in these two time periods were 11.8 and 7.9 deaths per 100,000 live births (excluding any deaths from spontaneous or induced abortions). During the period 1972–1976, abortions at late gestations were more hazardous than pregnancy (abortion-related mortality rates were 14.9 and 24.2 per 100,000 at 16–20 and ≥21 weeks of gestation); however, by 1977–1981, even the rate at the stage of gestation with the highest mortality (7.1 deaths per 100,000 abortions at 16–20 weeks of gestation) was just as low as the overall maternal mortality rate.

Rates of short-term abortion complications are also low and have been falling in almost all areas for which trend data are available. Officially reported complication rates from Canada, Czechoslovakia, Denmark and West Germany and from New York State range from 0.1 to 3.8 per 100 abortions. The most extensive study in the United States, conducted between 1975 and 1978, reported a rate of major complications of 0.67 per 100 abortions for all patients who received follow-up care (0.21 for those who underwent suction curettage) and 0.53 for patients who had no preexisting complications and who were not sterilized concurrently.

Discussion

In general, laws and policies governing abortion in the United States are similar to those in the rest of the developed world. Virtually all developed countries have liberalized their laws so that abortion services are legally available to all or almost all women who desire them. Although there are fewer restrictions on abortion in the United States than is common in other areas, the United States does not follow the almost universal practice of providing all or almost all legal abortions at little or no charge to the patient. Because of the cost of abortions and the lack of abortion facilities in some geographic areas, abortion services are in fact less accessible in the United States than in some other countries.

There is reason to believe that the trend toward liberalization of abortion laws will continue around the world, despite pressure from groups within the United States and elsewhere to once again restrict the procedure's availability. As developing nations progress economically, women will want smaller families, and many will turn to illegal abortion if statutory restrictions have not been eased. In such cases, there will be greater public pressure for legalization in order to reduce abortion-related mortality. In other cases, if medical personnel begin providing abortion services, increasing tolerance of the procedure may eventually lead to changes in the law, as has occurred in both Taiwan and Greece.

In countries where women want few children, the demand for abortion depends to a large extent on the prevalence and effectiveness of contraceptive use. Short of completely banning abortion, legal restrictions appear to have relatively little effect on abortion rates, at least in developed countries. A woman who wants to end an unwanted pregnancy will usually find a way to do so—by finding someone who will perform the abortion even if her eligibility under the law is questionable, or by traveling to an area where abortion is more widely available.

The key to reducing the U.S. abortion rate probably is the increased practice of contraception. This could come about if, for instance, people's attitudes toward existing contraceptive methods improved, or if couples became more motivated to prevent unplanned pregnancies. Over the long term, the development of new contraceptive methods that are more acceptable to the public and less demanding of the user has the greatest potential for affecting women's recourse to abortion.

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Screening for Sexually Transmitted Diseases By Family Planning Providers: Is It Adequate and Appropriate?

By Sevgi O. Aral, William D. Mosher,
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Summary

Of more than 3,000 women interviewed in the 1982 National Survey of Family Growth (NSFG) who had made at least one family planning visit in the 12 months preceding the interview, 50 percent report that they were tested for a sexually transmitted infection. Black women are far more likely to have been screened than are white women (67 percent compared with 47 percent); moreover, a racial differential is seen in every subgroup examined. There is also a large difference in the proportion screened according to the woman's source of family planning care: Those who attended a clinic are much more likely to have been screened than are women who saw a private doctor (62 percent and 43 percent, respectively). As with the race differential, this relationship persists after other variables are controlled for. In addition, women who live in the South are more likely to have been screened than are residents of other regions (58 percent compared with 46 percent). Differences by metropolitan and nonmetropolitan area of residence are small and are not statistically significant. Differences by marital status and age at first intercourse appeared statistically significant in preliminary analyses, but when controls for other factors were introduced, these differences became nonsignificant. Since many characteristics that are believed to be important risk markers for sexually transmitted infections are also predictors of whether a woman will be screened for such infections, current screening practices appear, in general, to target the appropriate groups.

"Half of all women who received family planning services in the year prior to the NSFG reported that they had been screened for STDs, indicating that a fairly high volume of screening is now conducted during family planning visits."

Introduction

Between 1965 and 1975, the annual number of reported cases of gonorrhea in the United States tripled, to about one million per year; when estimates of unreported cases are included, the annual total appears to have been nearly two million.[1] During the early 1980s, reports of a new sexually transmitted disease—*Chlamydia trachomatis*—also began to increase. Both types of infections can cause pelvic inflammatory disease (PID), pain and infertility.[2] Since many family planning clinic clients are teenagers and single women who use reversible methods to postpone childbearing until sometime in the future, providers must be concerned about risk factors for infertility and pregnancy loss among such clients. Sexually transmitted disease (STD) is one of the most serious of such risk factors.[3] To a certain extent, a woman's choice of contraceptive also influences the risk of infertility.[4]

For these reasons, a family planning visit is an entirely appropriate occasion for STD screening. However, until recently, there has been little information about the frequency with which women are screened for STDs as part of a family planning visit, or about the extent to which current screening practices are reaching the right women. Ideally, all sexually active women should be screened, but the high overall cost of such a strategy makes it impractical. Therefore, screening is generally aimed at women who are considered to be at greatest risk of contracting STDs. Well-established risk markers for STDs are age, race, marital status, region and area of residence, age at first intercourse and number of sexual partners. For example, infection rates are highest among women aged 15–24, among black women, among the unmarried, among residents of the South and among those who had first intercourse at a relatively young age.[5] In 1979, rates of gonorrheal infection among women aged 15–24 were about 1.5 per 1,000 population, more than double the rate in any other age-group.[6] The largest differential, however, is by race: Black women aged 20–24 in 1975 had a gonorrheal infection rate of 66 per 1,000; among white women 20–24 years of age, the infection rate was eight per 1,000—an eightfold difference.[7] Furthermore, the adverse consequences of an infection are greater among black women: PID is twice as common among blacks, and infertility is one and one-half times as common.[8] Thus, if screening decisions are based on individual characteristics, target groups for STD screening should include black women, single women, those under age 25 and those who began intercourse at an early age.

An alternate approach is to base the decision about target groups in part on the local STD rate. For example, current guidelines issued by the Planned Parenthood Federation of America for STD screening in their affiliate clinics consist of four specific recommendations:

- At clinics where the proportion of gonorrhea cultures that produce positive results (the "positivity rate") is four percent or higher, all clients should be cultured for *Neisseria gonorrhoeae* from the endocervix when they have a pelvic examination.

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The National Survey of Family Growth was jointly funded by the National Center for Health Statistics, the National Institute of Child Health and Human Development and the Office of Population Affairs, all divisions of DHHS.

Table 1. Among women aged 15–44 who made a family planning visit in the 12 months preceding interview, percentage who were given a test for venereal disease, by selected characteristics, according to race, United States, 1982

Characteristic	All†		White		Black	
	%	N	%	N	%	N
TOTAL	50	3,086	47	1,605	67	1,412
Marital status						
Married	46*	1,480	44*	935	67	504
Unmarried	55	1,606	51	670	67	908
Source of care						
Clinic	62*	1,400	59*	528	71*	837
Private doctor	43	1,686	41	1,077	62	575
Region						
Northeast	46	503	43	280	67	210
North Central	47	693	44	450	67	235
South	58*	1,412	54*	553	70	836
West	46	478	43	322	62	131
Area of residence						
Metropolitan	51	2,396	47	1,243	69	1,091
Central City	51	1,264	43	458	69	782
Suburban	51	1,132	50	785	69	309
Nonmetropolitan	47	690	44	362	62	321
Age at first intercourse						
<16	57*	840	54*	327	67	497
16–17	51	1,061	47	518	70	524
18–20	48	889	46	538	65	335
≥21	41	295	40	221	63	56

*Difference between designated subgroup and all other subgroups in the category is significant at $p<0.05$.

†Includes whites, blacks and women of other races.

Note: All racial differences shown in this table are statistically significant at $p<0.05$, except among women who had first intercourse at age 21 or older.

- At clinics where the positivity rate is less than two percent, only IUD users, women who have had multiple sexual partners, women with a history of gonorrhea or PID in the previous year and those who ask to be screened should be routinely tested for gonorrhea at the time of their initial visit and at each annual visit.
- At clinics where the rate of positive gonorrhea tests is between two and four percent, the decision as to which women are to be screened should be made by the affiliate's medical committee.
- At clinics that have no such data, screening criteria should be determined in accordance with the positivity rate in other local screening programs.[9]

Thus, a clinician's decisions about who should be screened should take into account the characteristics both of the local community and of the individual. The data described in this article reflect only the characteristics of individuals, but community characteristics can be inferred from them.

Methodology

The data for this analysis come from Cycle III of the NSFG, which was conducted in 1982 by the National Center for Health Statistics. The 1982 survey was a multistage probability sample of 7,969 women 15–44 years of age, of whom 4,577 were white, 3,201 were black and 191 were of other races.[10] Cycle III included one question relevant to the provision of STD diagnostic services during family planning visits: Respondents were asked about six kinds of medical services that might have been obtained during a visit in the preceding 12 months; one of these was "a test for venereal disease or VD." Of the survey participants, 3,086 (or 39 percent) had made at least one family planning visit in the year before the interview. The following analysis is based on those women.

The independent variables selected for the analysis are race, marital status, source of family planning care (private doctor or clinic), region and area of residence and age at first intercourse. The variables were chosen both by reference to the medical literature on STDs and through preliminary analyses of NSFG data, which showed that other variables—such as age, number of marriages, education, income, Hispanic origin, religious affiliation, method of payment for the visit and the contraceptive method currently used—have little impact on the proportion of women who are screened. (Unfortunately, the NSFG contained no direct measure of the number of sexual partners, which is a key risk factor for STDs.)

All numbers and percentages in this article have been weighted to provide nationally representative estimates of STD screening practices. The weight for each case in the NSFG was adjusted to take into account the differential sampling rates for whites, blacks and teenagers, and was further adjusted to account for nonresponse and to agree with independent totals by age, marital status and race taken from U.S. Census data.[11] These adjustments made it possible to establish national estimates from the survey data.

Results

Overall, 50 percent of women of reproductive age who made at least one family planning visit in the year before the survey said that they had been screened for STDs during at least one of their visits (see Table 1). The single most dramatic difference in the proportion screened is by race: Sixty-seven percent of black women were tested, compared with 47 percent of white women. All black-white differences but one (among women who first had intercourse after age 20) are statistically significant ($p<0.05$),* and all are at least 12 percentage points in magnitude. Because of this large and persistent racial difference, all further analyses in this article are shown separately for white and for black women.

For women of all races, the likelihood of screening varies significantly by marital status and by source of health care. Table 1 shows that the proportion of women who underwent STD screening is significantly lower among married women (46 percent) than among unmarried women (55 percent). Never-married and previously married women do not differ significantly in the proportion screened (54 and 55 percent, respectively, not shown). Among whites the proportion who were screened is significantly lower among currently married women (44 percent) than among the unmarried women (51 percent). In contrast, among blacks, the proportion of women who were screened

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*Differences between proportions were tested for significance using t-tests. Multiple classification analysis was used to control for potentially confounding variables. Standard errors and t-tests used here are based on the balanced half-sample replication technique, which is an accurate method for estimating sampling errors from complex sources of data such as the NSFG. These estimates take into account both the sample size and the sample design upon which the weighted percentages are based. The significance tests used in the multivariate analyses also are based on this technique and do *not* assume simple random sampling.

does not differ at all by marital status (67 percent in both groups).

Women who made one visit or more to a clinic in the preceding year are substantially more likely to have been screened (62 percent) than are women who went to a private doctor (43 percent). This difference is particularly pronounced among white women: Fifty-nine percent of those who attended clinics were screened, compared with only 41 percent of those who visited private doctors. Among black women, the differential is only half as large (71 percent compared with 62 percent), but is still statistically significant.

The proportion of women who were screened also varies significantly by region. Residents of the South are significantly more likely to have been screened than are residents of other regions (58 percent, compared with 46–47 percent). This pattern appears among white women but not among blacks: Fifty-four percent of white southerners were screened, as compared with only 43–44 percent of white women in other regions. In contrast, regional variations among black women are small and are not significant. There are no significant differences by area of residence among any of the groups of women. However, the data suggest that white suburban women are slightly more likely to have been screened than are white residents of central cities and nonmetropolitan areas.

The differences by age at first intercourse in the proportion of all women who were screened are large and significant: Fifty-seven percent of women who first had intercourse before age 16 were screened for STDs, compared with only 41 percent of those who began intercourse at age 21 or later—a difference of 16 percentage points. Among white women, there is a significant difference of 14 points between these groups; among blacks, however, the difference is smaller and is not significant.

Because race, marital status (among whites) and source of care are key determinants of the proportion of women who were screened, these variables are examined simultaneously in Table 2. After the effects of marital status and source of care are controlled for, the proportions of white women and black women who were screened continue to differ by at least 18 percentage points (significant at $p<0.05$). The only exception is among unmarried women who attended clinics, for whom there is only an eight-point, nonsignificant differential. Thus, race apparently is a determining factor in the decision to screen women for STDs.

Once the effects of race and source of care are controlled for, the proportions of women screened do not differ significantly by marital status (Table 2). For example, among whites who went to private doctors, 41 percent of married women were screened, compared with 42 percent of unmarried women. Thus, it appears that unmarried white women are more likely than married whites to have been screened because they also are more likely to attend a clinic, not because of their marital status per se.

Table 2. Among women aged 15–44 who made a family planning visit in the 12 months preceding interview, percentage who were given a test for venereal disease, by marital status and race, according to source of care

Marital status and race	Source of care					
	Total		Private doctor		Clinic	
	%	N	%	N	%	N
Married						
All	46	1,480	43	1,009	57	471
White	44	935	41*	721	55*	214
Black	67	504	62	265	73	239
Unmarried						
All	55	1,606	45	677	65	929
White	51	670	42*	356	62	314
Black	67	906	62	310	70	598

*Significantly different from other subgroups at $p<0.05$.

Differences in screening by source of care vary greatly by race. White women who went to a clinic are more likely to have been screened than are those who visited a private doctor. For example, 62 percent of unmarried white women who visited a clinic were screened, compared with only 42 percent of unmarried white women who consulted a private doctor. On the other hand, black women who attended a clinic appear slightly more likely to have been screened than those who visited private doctors, but the difference is not significant.

Multiple classification analysis was used to control for the effects of variables in addition to race, source of care and marital status (see Table 3). The observed percentages shown in the table are taken from the cross-tabulations shown in Table 1; the adjusted percentages show the effects of one variable (e.g., source of care) after the effects of all other variables have been controlled for.

The multivariate analysis shows that the adjusted proportions of women who were screened differ significantly by race, source of care and region. Thus, these three variables have significant independent effects on the likelihood that a woman will be screened for STDs. Among white women, after the other variables are controlled for, those who received care from a clinic are much more likely to have been screened than are those who visited a private doctor (58 percent compared with 42 percent); in addition, southern whites are more likely to have been screened

Table 3. Among women aged 15–44 who made a family planning visit in the 12 months preceding interview, observed and adjusted† percentage who were given a test for venereal disease, by selected characteristics, according to race

Characteristic	All		White		Black	
	Observed	Adjusted	Observed	Adjusted	Observed	Adjusted
Race						
White	47	48*	47	na	na	na
Black	67	61	na	na	67	na
Marital status						
Married	46	49	44	46	67	68
Not married	55	51	51	49	67	67
Source of care						
Clinic	62	59*	59	58*	70	70
Private	43	45	41	42	62	62
Region						
South	58	57*	54	54*	69	71
Other	46	47	44	44	65	63
Residence						
Suburban	46	44	44	42	62	58
Other	51	51	48	48	68	69
Age at first intercourse						
<16	57	53	54	52	67	66
16–20	50	50	46	46	68	68
≥21	41	46	40	44	62	63

*Significantly different from other subgroups at $p<0.05$. †Adjusted by multiple classification analysis.

Note: na = not applicable.

than are white women living in the other three regions (54 percent and 44 percent, respectively).

Among black women, none of the variables has an independent effect that is significant at the $p<0.05$ level. However, source of care, region and area of residence do show marginally significant independent effects (at $p<0.10$, not shown): Black women who used a clinic are more likely to have been screened than are those who visited a private doctor (70 percent compared with 62 percent); black southerners are more likely than other blacks to have been screened (71 percent compared with 63 percent); and black women who reside in central cities and nonmetropolitan areas are more likely than black women living in the suburbs to have been screened for STDs (69 percent compared with 58 percent).

Discussion

These findings should be of some interest to family planning providers, although certain limitations of the particular data set used in this analysis must be acknowledged. First, the measure of screening is based on women's self-reports rather than on those of health care providers. If women incompletely recalled or were unaware of the range of diagnostic services that they received during a family planning visit, the accuracy of these findings might be affected. (For example, a physician might not have told a woman undergoing a routine pelvic exam that an intracervical specimen was taken for an STD culture.) If there was a great deal of incomplete reporting, then the amount of STD screening that is conducted around the country might be underestimated, and to the extent that this underestimation varies across subgroups, it might blur actual differentials among groups. In addition, the definition of STD was nonspecific; the item on the NSFG questionnaire simply referred to "a VD test." Thus, we have no information on what specific tests might have been done. However, because the NSFG was conducted in early 1982, before public awareness about the wide spectrum of sexually transmitted infections increased, we assume that the respondents referred primarily to gonorrhea and syphilis testing.

The data set's greatest value in relation to the evaluation of STD screening is that it is representative of the general population. Because the NSFG represents a national sample, we can infer the adequacy of screening by family planning providers through two questions. First, do family planning practitioners provide enough STD screening? While it would theoretically be desirable to screen all sexually active women of reproductive age, the expense involved would be high; such a policy would almost certainly not be cost-effective. We have found that half of all women who received family planning services in the year prior to the NSFG reported that they had been screened for STDs, indicating that a fairly high volume of screening is now conducted during family planning visits. Clinics appear more likely to screen women for STDs than are private doctors, and the adjusted values reported here suggest that this differential in medical practices is independent of the fact that the clientele of clinics is disproportionately young, unmarried and black.[12]

Second, are screening efforts appropriately targeted? Reported STD rates are substantially higher among black women than among white women,[13] so if screening is actually based on high risk, tests would be done more often on black women. Our findings are consistent with this hypothesis: Screening is more common among blacks, and the proportion screened varies less for black women than for white women according to such characteristics as source of care and age at first intercourse. Most black women are screened, regardless of their other characteristics, and are most likely to be screened if they attend clinics or if they live in the South. White women are most likely to be screened if they have certain high-risk characteristics, such as residence in the South or an early age of first sexual intercourse (presumably an indicator of a greater number of sexual partners).

With respect to the Planned Parenthood guidelines discussed earlier, the higher adjusted proportion of black women who were screened, together with their higher STD rates, suggests that more black women than white women live in communities with high positivity rates. Thus, the race differential in STD screening found here may partly measure a "community-level" effect. The impact of the source of care after adjustment may also reflect a higher positivity rate in the communities served by clinics. Thus, although we do not have the data that would be needed to evaluate the Planned Parenthood guidelines, the direction of the differentials in STD screening is consistent with the literature on risk markers for STDs, particularly for gonorrhea. The emergence of such characteristics as race and source of care as important predictors of STD screening suggest that selective screening efforts are generally well targeted. A full evaluation of the adequacy of STD screening practices requires at least two types of data that are not currently available: For the individual woman, we need to know the number of sexual partners that she has had, both in the recent past and in the course of her reproductive life, because this is an essential measure of STD risk. Overall, it is also important that we have a measure of STD incidence rates for particular providers and for local communities.

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Public Funding of Contraceptive, Sterilization And Abortion Services, 1985

By Rachel Benson Gold and Jennifer Macias

Summary

In FY 1985, the federal and state governments spent $398 million to provide contraceptive services and supplies. The two leading sources of funding were the Medicaid program and Title X of the Public Health Service Act. The former accounted for $137 million, or 34 percent of all public expenditures; and the latter program accounted for $133 million, also 34 percent. Two block-grant programs—Social Services and Maternal and Child Health—provided $40 million and $23 million, respectively; together, they were responsible for 16 percent of public support for contraceptive services. State governments, which spent $64 million of their own revenues, accounted for another 16 percent of funding.

The federal and state governments together spent $64 million to subsidize sterilizations in FY 1985. The federal government provided 94 percent of the funding—84 percent through the Medicaid program. In addition, the states and the federal government spent $66 million to subsidize 188,000 abortions; in this case, however, the federal government contributed less than one percent of the funds used.

These data come from a survey of state agencies, and should be viewed as approximations rather than as precise figures.

Sources of Funds

Federal funds for family planning services come primarily from four sources: Title X of the Public Health Service Act, the Maternal and Child Health (MCH) and Social Services block-grant programs (Titles V and XX of the Social Security Act, respectively), and Medicaid (Title XIX of the Social Security Act). Title X, the only federal program designed specifically to provide family planning services, is administered by the Department of Health and Human Services; the DHHS directly awards Title X grants to state health departments, hospitals, family planning councils and other public and private nonprofit providers of family planning services. The two block-grant programs, in contrast, are administered by the states, which thus control the types of services that are provided and the distribution of federal funds to support those services. The federal MCH funds generally go to state health agencies, and the Social Services funds, to state welfare agencies. The state agencies either provide services directly or arrange for them to be provided. States may use their block-grant allotments to provide family planning services, but are not required to do so.

Before MCH block-grant funds are given to the states, 10–15 percent of the total allocation is set aside for special programs of national or regional significance, such as genetic services and hemophilia programs. Grants under the set-aside portion are awarded directly by the DHHS. The remaining 85–90 percent of MCH block-grant funds are then allocated to the states. Every four federal MCH dollars received by a state must be matched with three dollars in state funds. Unlike the MCH block grant, the Social Services block grant includes neither a set-aside component nor a requirement that states match federal funds with their own dollars.

The fourth major source of federal funds is Medicaid, a joint federal-state program designed to provide necessary health services to the very poor—generally, members of families who are eligible for Aid to Families with Dependent Children. Since Medicaid, unlike the other sources of funding for family planning services, is an entitlement program, spending under the program is controlled not by a direct congressional appropriation but rather by the number of people eligible to receive Medicaid benefits. Except for Arizona, all states and the District of Columbia participate in the Medicaid program. Since 1982, Arizona has had a demonstration program similar to Medicaid, but in FY 1985 it did not include family planning services.

The federal government reimburses state Medicaid expenditures at rates established by the DHHS. Each state is assigned a specific federal reimbursement rate applicable to most of the services provided through the program; family planning services, however, are reimbursed at the special matching rate of nine federal dollars for every state dollar spent. Despite the existence of this special rate, the DHHS has never issued a formal, nationally applicable definition of family planning. As a result, the services for which federal reimbursement is claimed at the special rate can differ from state to state.

In addition to federal funds, most states use at least some of their own revenues to provide family planning services. These state funds come from a variety of sources, including specific appropriations made by state legislatures for family planning services, general health or welfare agency funds that are allocated to family planning, and the states' general assistance programs. Some states provide family planning services through their Medicaid programs to people who do not meet the eligibility criteria for federal Medicaid reimbursement. Services provided through these state-only portions of Medicaid are funded entirely with state dollars.

Funding Data

For more than a decade, The Alan Guttmacher Institute (AGI) has conducted periodic surveys of state agencies to determine their expenditures for family planning services through the main federal programs, as well as their use of state revenues for such services. Until now, the most recent figures available have been those for FY 1983.[1] In April 1986, the AGI sent questionnaires to every state health and welfare agency and state Medicaid program, requesting data for federal FY 1985 (October 1, 1984, through September 30, 1985). With a few exceptions, every state and the District of Columbia re-

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Table 1. Reported public expenditures for contraceptive services and supplies (in 000s of dollars), by funding source, according to state, FY 1985

State	Total	Federal sources					State sources
		Total	Medicaid*	Title X†	Social Services block grant*	MCH block grant*	
U.S. total	**$397,599**	**$333,738**	**$137,082**	**$133,494**	**$40,051**	**$23,111**	**$63,861**
Alabama	6,314	6,214	2,513	3,351	u	350	100
Alaska	353	353	nr	353	nr	nr	nr
Arizona	3,770	3,770	0‡	2,940	300	530	0
Arkansas	2,215	2,125	0	1,848	0	277	90
California	50,267	27,455	14,927	12,528	0	0	22,812
Colorado	3,023	2,121	707	1,414	0	0	902
Connecticut	3,570	3,570	1,124	1,259	1,157	30	0
Delaware	1,424	1,227	668	526	0	33	197§
D.C.	1,170	1,170	505	558	0	107	0
Florida	17,271	5,546	891	4,070	0	585	11,725
Georgia	10,648	9,899	5,627**	4,272	0	0	749
Hawaii	1,853	1,290	408	830	u	52	563
Idaho	1,167	1,167	100	640	0	427	0
Illinois	16,477	15,779	8,580	3,901	2,208	1,090	698
Indiana	8,020	8,020	1,923	2,413	2,600	1,084	0
Iowa	4,622	4,476	2,642	1,679	155	0	146
Kansas	2,016	1,991	697	1,294	u	0	25
Kentucky	5,441	5,441	1,632	2,418	0	1,391	0
Louisiana	9,956	6,858	3,334	2,664	0	860	3,098
Maine	3,947	2,693	1,416	927	350	0	1,254
Maryland	8,337	7,743	4,654	2,442	0	647	594
Massachusetts	8,098	7,771	2,748	3,520	1,243	260	327
Michigan	14,174	13,509	8,404	4,302	0	803	665§
Minnesota	5,214	4,350	2,287††	1,665	0	398	864§
Mississippi	3,906	3,788	nr	2,959	829	0	118
Missouri	5,788	5,788	2,272	3,099	0	417	0
Montana	1,196	1,196	nr	966	nr	230‡‡	u
Nebraska	1,436	1,436	356	983	0	97	0
Nevada	1,079	1,079	242	837	0	0	0
New Hampshire	1,310	1,232	182	608	427	15	78
New Jersey	11,292	10,848	3,578	4,489	1,915	866	444
New Mexico	2,740	2,140	801	1,076	93§§	170	600
New York	38,419	32,731	19,252	8,189	3,100§§	2,190	5,688
North Carolina	7,667	7,474	557	4,213	2,394*†	310	193
North Dakota	702	702	179	404	0	119	0
Ohio	22,712	22,712	16,365	5,608	575	164	u
Oklahoma	6,944	3,536	888	2,125	0	523	3,408
Oregon	3,275	3,071	777	1,757	0	537	204
Pennsylvania	19,128	18,736	6,013	7,127	4,780	816	392
Rhode Island	757	727	405	311	11	0	30§
South Carolina	5,792	3,104	99	2,990	0	15	2,688
South Dakota	579	579	122	457	0	0	0
Tennessee	9,685	8,970	1,982**	3,780	2,387	821	715
Texas	32,699	31,677	3,737	8,932	13,568§§	5,440	1,022§
Utah	707	707	u	573	0	134	0
Vermont	1,069	1,069	373	448	248§§	0	u
Virginia	6,263	6,263	1,922	2,838	1,003§§	500	0
Washington	7,817	5,532	1,998	3,534	0	0	2,285
West Virginia	2,703	2,523	473	1,149	678	223	180
Wisconsin	12,125	11,125	8,722**	1,773	30	600	1,000
Wyoming	462	455	nr	455	0	0	7

*Includes federal and state funds. †Includes federal funds only.

‡Arizona's demonstration Medicaid program does not cover family planning services.

§Includes funds for sterilization services. **Includes funds for sterilization services.

††Includes funds from the state's refugee program.

‡‡Includes $203,000 from the Preventive Health block grant. §§Includes funds for sterilization services.

*†Includes funds from the Low Income Energy Assistance program.

Note: In this and following tables, u = unavailable (state reported expenditures but could not specify amount); nr = no response (state did not respond to survey).

sponded to the survey (Alaska did not respond to the health agency survey; Alaska, Arizona and Montana did not respond to the welfare agency survey; and Alaska, Mississippi, Montana and Wyoming did not respond to the Medicaid survey). Data on funding under the Title X program were obtained from the DHHS and include all Title X grants for family planning services made in a state.[2]

Although the data generated by both the current and the previous AGI surveys of state agencies represent the most complete account of public funding that is available, the data nonetheless have serious limitations. The first problem is that a complete separation of federal and state expenditures is not always possible. Both Medicaid and the MCH block grant require partial state matching of federal dollars. In addition, some states use their own funds to supplement their federal Social Services block-grant allotments, even though there is no matching requirement. In the data reported here, as in the data for previous years, state (matching) supplements to the federal Medicaid, MCH and Social Services programs have been combined with federal funds, while state expenditures not made specifically to match federal funds have been counted separately. Consequently, the federal contribution to public funding has been overestimated, and the state share has been underestimated.

A second problem is that to permit comparison with data from previous years, the 1985 data focus on medical family planning services, which include outpatient and inpatient hospital services, physician and clinic services, and prescription drugs. However, expenditures for nonmedical services (such as outreach, staffing, administration, education, training and research) have become increasingly difficult to isolate from other outlays, and thus it has not been possible to exclude them in all cases.

In recent years, it has also become harder to separate expenditures for contraceptive services (excluding sterilization) from expenditures for other medical family planning services, such as infertility and prenatal genetic diagnosis and treatment and screening for sexually transmitted diseases. While affecting all funding sources, this problem is most acute in the case of Medicaid. For example, 36 states and the District of Columbia reported covering prenatal genetic services through their Medicaid programs in FY 1985 (up from 24 states and the District in FY 1979[3]); nearly all of the 36 included their expenditures for such care in the amount they reported for contraceptive services.

It is also not always possible to distinguish expenditures for sterilization from those for reversible methods (the two sets of expenditures are reported separately in this article). Most but not all of the state Medicaid agencies could isolate the amounts paid for sterilization; but only about one-third of the state health agencies could identify the Title X funds so used. We also have no data on the use of Title X monies for sterilization by grantees other than state health agencies.

All of these problems have been compounded by the decrease in accountability that affects programs funded through block grants to the states (as compared with categorical programs such as Title X), and by the budget cuts experienced by federal agencies in the last few years. Consequently, the AGI data presented below should be viewed as providing an approximation of general trends rather than a precise accounting.

Contraceptive Services and Supplies

As Table 1 shows, all 50 states and the District of Columbia reported spending $397.6 million for contraceptive services (excluding sterilization wherever possible) in FY 1985. Federal funds constituted 84 percent of the total. Although Medicaid surpassed Title X somewhat in dollars spent ($137.1 million vs. $133.5 million), each program accounted for about 34 percent of all public expenditures. The Social Services block grant provided $40.1 million, or 10 percent of total public funds spent, and the MCH block grant provided $23.1 million, or six percent.

Forty-three states and the District of Columbia said they funded contraceptive services and supplies through the Medicaid program in FY 1985. Of the states that responded to the AGI survey, only Arkansas reported no Medicaid expenditures (Utah was unable to specify dollar amounts, and Arizona's demonstration Medicaid program does not cover family planning services). California, New York and Ohio together reported spending $50.5 million, or 37 percent of total Medicaid expenditures for contraceptive services. All states that reported expenditures said they had claimed federal reimbursement at the 90 percent matching rate for family planning.

All the states and the District of Columbia received some Title X funds in FY 1985. Together, five states—California, New York, Ohio, Pennsylvania and Texas—accounted for 32 percent of all Title X funds spent during the fiscal year.

Twenty-two states reported funding contraceptive services through their Social Services block grants. (Three additional states reported such expenditures, but were not able to provide data.) As in previous surveys, Texas reported the largest outlay under the Social Services block grant, amounting to 34 percent of the sum spent nationwide. Thirty-six states and the District of Columbia reported spending some of their MCH block-grant funds for contraceptive services; the largest such expenditure occurred, again, in Texas (24 percent of the total).

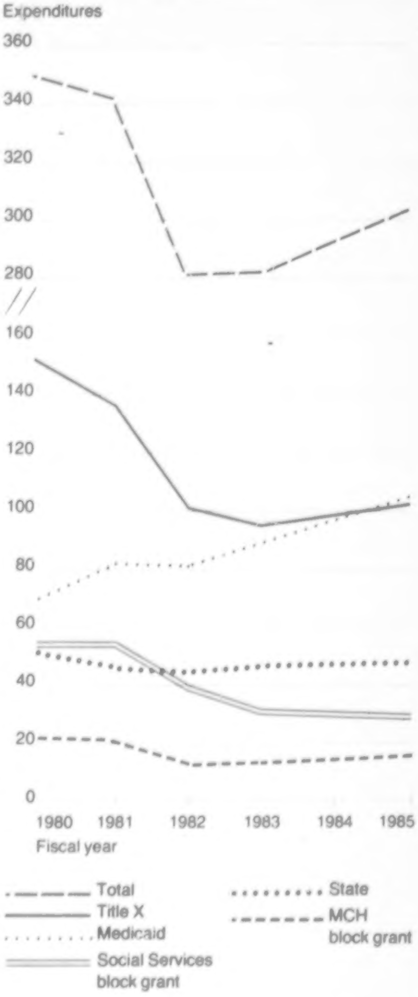
Thirty-four states used $63.9 million of their own revenues (three other states made expenditures, but could not provide figures). Ten states each spent at least $1 million of their own funds. Slightly more than half of all state funding came from just two states, California and Florida; indeed, California alone was responsible for 36 percent of total state outlays. Thirty states spent $59 million through their state health agencies; six states spent some $3 million through the state-only portions of their Medicaid programs; six spent nearly $2 million through their general assistance programs; and one state, Iowa, used other welfare agency funds.

Thus, in FY 1985 wide variations existed among the states in the pattern and extent of public funding for contraceptive services. Title X was the chief source of funding in 32 states and the District of Columbia, and Medicaid was the chief source in 13 states. While two states, Texas and Indiana, reported greater expenditures through the Social Services block grant than through any other single program, in no state was the MCH block grant the primary funding source. Three states—California, Florida and Oklahoma—supported services mainly with their own revenues. Total reported expenditures exceeded $15 million each in California, Florida, Illinois, New York, Ohio, Pennsylvania and Texas; these seven states were responsible for half of all reported public expenditures nationwide. The largest single expenditure was made by California (13 percent of the national total). Only six states reported spending less than $1 million each for contraceptive services and supplies.

Funding Trends

Figure 1 illustrates the changes in expenditures that have occurred since FY 1980; to adjust for the effects of inflation, funding levels are expressed in constant (1980) dollars. Between FY 1981 and FY 1982, under the first budget authored by the Reagan administration, total federal and state funding for contraceptive services and supplies declined by 18 percent (from $341.9 million to $280.3 million). The reduction stemmed from cuts of 27–29 percent in the Title X, MCH and Social Services programs, appropriations for which are directly controlled by Congress. State funding and spending under Medicaid, neither of which was directly affected by the administration's budget cuts, also declined, but by a slight proportion. Since then, the only program that has shown clear and sustained growth has been Medicaid. In FY 1985, consequently, total public spending for contraceptive services remained below the levels reached in FY 1980 and FY 1981.

Figure 1. Reported public expenditures for contraceptive services and supplies, by funding source, FY 1980–FY 1985 (in 000s of constant [1980] dollars)



Together, Title X and the two block-grant programs have been contributing a diminishing share of total national expenditures for such services—49 percent in FY 1985, compared with 65 percent in FY 1980. The role played by Medicaid and state spending, on the other hand, has become more important. Although the number of people eligible to receive health care through Medicaid has remained virtually unchanged since FY 1981,[4] expenditures under the program for contraceptive services have risen by 29 percent (in constant dollars). One reason is that of all the sources of funds for family planning, Medicaid is the most directly responsive to inflation and to changes in the cost of providing medical care. As the cost of providing services has grown, Medicaid expenditures have grown. A second reason is that increasingly, noncontraceptive services are being offered as part of comprehensive medical family planning services; we are sometimes unable to distinguish in the Medicaid data between the cost of such services and the cost of contraceptive services. As for state expenditures, many states have made special appropriations for family planning services, and a few have launched special comprehensive initiatives for dealing with teenage pregnancy that include provision of contraceptive services as a crucial, but perhaps small, component. (Again, as contraceptive services are integrated into these comprehensive programs, specific expenditures for contraceptive care become harder to isolate from total program expenditures.)

Table 2. Reported public expenditures for sterilizations (in 000s of dollars), by funding source, according to state, FY 1985

State	Total	Federal sources					State sources
		Total	Medicaid*	Social Services block grant*	Title X†	MCH block grant*	
U.S. total	**$63,800**	**$59,978**	**$53,330**	**$3,428**	**$2,518**	**$702**	**$3,822**
Alabama	2,739	2,739	2,726	u	13	0	0
Alaska	nr	nr	nr	nr	nr	nr	nr
Arizona	u	u	0‡	nr	0	0	nr
Arkansas	814	814	771	0	0	43	0
California	6,108	4,291	4,291	0	0	0	1,817
Colorado	656	555	555	0	0	0	101
Connecticut	1,393	1,393	1,393	0	0	0	0
Delaware	310	310	310	0	0	0	0
D.C.	82	82	82	0	0	0	0
Florida	1,126	1,126	191	0	935	0	0
Georgia	86	u	u	0	0	0	86
Hawaii	826	704	704	u	0	0	122
Idaho	513	513	438	0	75	0	0
Illinois	4,201	4,063	3,954	0	109	0	138
Indiana	2,158	2,158	2,158	0	0	0	0
Iowa	1,414	1,414	1,404	0	10	0	0
Kansas	439	409	409	u	0	0	30
Kentucky	2,964	2,964	2,332	0	632	0	0
Louisiana	1,307	1,307	1,307	0	0	0	0
Maine	273	209	209	0	0	0	64
Maryland	1,299	1,299	1,299	0	0	0	0
Massachusetts	735	735	735	0	0	0	0
Michigan	3,577	3,577	3,577	0	0	0	u
Minnesota	648	622	622	0	0	0	26
Mississippi	796	439	nr	0	130	309§	357
Missouri	786	786	786	0	0	0	u
Montana	6	6	nr	nr	6	0	u
Nebraska	185	185	185	0	0	0	0
Nevada	73	73	73	0	0	0	0
New Hampshire	15	15	15	0	0	0	0
New Jersey	1,878	1,843	1,843	0	0	0	35
New Mexico	331	331	316	u	15	0	0
New York	5,052	4,686	4,686	u	0	0	366
North Carolina	2,662	2,662	1,780	865	17	0	0
North Dakota	127	127	119	0	8	0	0
Ohio	2,391	2,391	2,391	0	0	0	u
Oklahoma	517	517	517	0	0	0	0
Oregon	358	358	358	0	0	0	0
Pennsylvania	3,979	3,466	3,466	0	0	0	513
Rhode Island	158	158	158	0	0	0	0
South Carolina	1,394	1,394	1,007	0	191	196	0
South Dakota	103	103	87	0	16	0	0
Tennessee	417	378	u	0	224	154	39
Texas	6,894	6,894	4,331	2,563	u	u	u
Utah	u	u	u	0	0	0	0
Vermont	67	67	67	u	0	0	u
Virginia	617	617	617	u	0	0	0
Washington	1,023	895	895	0	0	0	128
West Virginia	303	303	166	0	137	0	0
Wisconsin	u	u	u	0	0	0	u
Wyoming	u	u	nr	0	0	0	u

*Includes federal and state funds. †Includes federal funds only.

‡Arizona's demonstration Medicaid program does not cover family planning services.

§Includes $45,000 from the Appalachian Regional Commission.

Sterilization Services

One-third of U.S. women who use a method of contraception rely on either female or male sterilization, making sterilization the leading contraceptive method.[5] As Table 2 shows, 45 states and the District of Columbia said they spent $63.8 million in public funds for sterilization services in FY 1985. The three states reporting the largest expenditures—California, New York and Texas, each of which spent at least $5 million—accounted for 28 percent of the total amount spent.

Ninety-four percent of public funds came from federal sources. Medicaid was by far the major source of public funding, accounting for 84 percent of all public expenditures for sterilization in the fiscal year. Forty-one states and the District of Columbia spent $53.3 million through the program; four other states reported sterilization expenditures, but were unable to separate them from total contraceptive expenditures under Medicaid. However, just six states accounted for 46 percent of Medicaid sterilization expenditures nationwide, and three of them—California, New York and Texas—accounted for 25 percent.

The other federal programs combined provided 10 percent of total public funding. North Carolina and Texas together reported spending $3.4 million through the Social Services block grant; seven additional states spent unspecified amounts. Four states used $700,000 in MCH block-grant funds; a fifth state reported MCH outlays, but was unable to supply the figures. Title X funds, used by 15 states, amounted to $2.5 million.

Fourteen states spent $3.8 million of their own revenues for sterilization. Eight other

Table 3. Reported public expenditures for abortions (in 000s of dollars) and number of publicly funded abortions, by funding source, according to state and state policy, FY 1985

State and policy	Expenditures			No. of abortions		
	Total	Federal*	State	Total	Federal*	State
U.S. total	**$66,171**	**$312**	**$65,859**	**187,997**	**484**	**187,513**
NONRESTRICTIVE	65,907	59	65,848	187,547	86	187,461
Voluntary	**27,137**	**54**	**27,083**	**85,976**	**86**	**85,890**
Alaska	nr	nr	nr	nr	nr	nr
Colorado	241	19	222	947	74	873
D.C.	1,092	0	1,092	3,464	0	3,464
Hawaii	928	0	928	1,800	0	1,800
Maryland	1,780	0	1,780	3,484	0	3,484
Michigan	6,351	0	6,351	20,620	0	20,620
New York†	13,400	0	13,400	43,000	0	43,000
North Carolina	1,375	35	1,340	6,576	12	6,564
Oregon	324	0	324	1,602	0	1,602
Washington‡	1,574	0	1,574	4,025	0	4,025
West Virginia	72	0	72	458	0	458
Court order	**38,770**	**5**	**38,765**	**101,571**	**0**	**101,571**
California	31,224	0	31,224	84,000	0	84,000
Connecticut	489	5	484	u	u	u
Massachusetts	1,338	0	1,338	7,497	0	7,497
New Jersey	5,688	0	5,688	9,891	0	9,891
Vermont	31	0	31	183	0	183
RESTRICTIVE	264	253	11	450	398	52
Life only	**243**	**243**	**0**	**378**	**378**	**0**
Alabama	2	2	0	10	10	0
Arizona	0	0§	0	0	0§	0
Arkansas	1	1	0	2	2	0
Delaware	2	2	0	3	3	0
Florida	**	**	0	1	1	0
Georgia	0	0	0	0	0	0
Idaho	7	7	0	6	6	0
Illinois	1	1	0	6	6	0
Indiana	**	**	0	1	1	0
Kansas	0	0	0	0	0	0
Kentucky	0	0	0	0	0	0
Louisiana	0	0	0	0	0	0
Maine	9	9	0	7	7	0
Mississippi	nr	nr	nr	nr	nr	nr
Missouri	0	0	0	0	0	0
Montana	nr	nr	nr	nr	nr	nr
Nebraska	**	**	0	1	1	0
Nevada	**	**	0	1	1	0
New Hampshire	0	0	0	0	0	0
New Mexico	0	0	0	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	196	196	0	306	306	0
Oklahoma	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	5	5	0	3	3	0
South Dakota	0	0	0	0	0	0
Tennessee	8	8	0	20	20	0
Texas	12	12	0	11	11	0
Utah	0	0	0	0	0	0
Other restrictions	**21**	**10**	**11**	**72**	**20**	**52**
Iowa	5	2	3	20	11	9
Minnesota	2	2	0	4	4	0
Pennsylvania	0	0	0	0	0	0
Virginia	14	6	8	48	5	43
Wisconsin	0	0	0	0	0	0
Wyoming	nr	nr	nr	nr	nr	nr

*Under Medicaid; expenditures include both federal and state funds for procedures eligible for federal reimbursement.

†Data are for FY 1983.

‡Expenditures represent funds spent by the state health and Medicaid agencies; number of abortions includes only those funded through the state Medicaid agency.

§Arizona's demonstration Medicaid program does not cover abortions.

**Less than $500.

states also used their own funds, but could not report the amounts involved. California alone was responsible for 48 percent of all state sterilization expenditures. State funds came from several sources: $1 million from the state segments of Medicaid programs, to provide services for people not eligible for federal reimbursement under the program (seven states);[*] $2.5 million from state health agencies (six states); and almost $300,000 from state welfare agencies (four states).

Abortion Services

The implementation of the Hyde Amendment in 1977 virtually eliminated any federal role in providing subsidized abortion services for poor women in the United States.[†] For all of FY 1985, federal funds could be used for abortions only in the minuscule number of cases in which the life of the woman would be endangered if the pregnancy were carried to term. As Table 3 shows, 20 states reported claiming $312,000 in federal funds to provide 484 abortions in FY 1985. Ohio alone accounted for 63 percent of the number of federally subsidized procedures, and for 63 percent of the federal funds spent.

A number of states use their own monies to provide publicly funded abortion services for poor women. Sixteen states and the District of Columbia reported spending $65.9 million to fund 187,513 abortions in FY 1985. Almost all of those procedures were performed in the 15 states (and District of Columbia) that followed a policy of paying for all or most medically necessary abortions for indigent women.[‡] Most of these jurisdictions used the definition of medically necessary abortion that was set forth in the Supreme Court's 1973 abortion decisions—that is, "one that is required in light of all factors—physical, emotional, psychological, familial and the woman's age—relevant to the well-being of the patient." Nine of the 15 states plus the District of Columbia paid for abortions voluntarily; the other five (California, Connecticut, Massachusetts, New Jersey and Vermont) did so under court order. California and New York reported the largest numbers of state-funded abortions: Together they accounted for two-thirds of all such procedures.

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[*] Such persons either are ineligible for federal programs or are eligible but do not meet the criteria for federal funding of their sterilizations. Since 1979, DHHS regulations have placed strict limits on sterilizations that are provided under Medicaid. The regulations require a detailed and complex informed consent procedure, mandate a 30-day waiting period between the time when the woman gives her consent and the date the sterilization is performed, and prohibit the sterilization of anyone who is under age 21 or mentally incompetent. (See: *Federal Register*, **43**: 52146, 1978.)

[†] Hyde Amendments have been attached to the annual appropriations bills for the Department of Labor and the DHHS every year since 1977. Although the original sponsor, Rep. Henry J. Hyde (R.-Ill.), has not always sponsored the amendment since 1977, the amendment has nonetheless always borne his name.

[‡] In one of those states, Colorado, a ballot referendum approved by the voters on Nov. 6, 1984, changed the state's funding policy from the one shown in the table: As of June 4, 1985, the state pays for abortions only in cases of life endangerment, fetal defect or a "psychiatric condition which represents a serious and substantial threat to the life of the pregnant woman." Similar referenda were defeated in Washington in 1984 and in Arkansas, Massachusetts, Oregon and Rhode Island in 1986. As a result, the funding policies of all states (except Colorado) and the District of Columbia remain unchanged from those in effect in 1985.

Twenty-nine states had a policy of funding abortions only in cases of life endangerment, but none of them paid for any abortions during the 1985 fiscal year. Six other states operated under policies just slightly less restrictive: In Minnesota, Pennsylvania, Wisconsin and Wyoming, the grounds for state funding were life endangerment, rape and incest (Wyoming's policy was broadened from "life only" midway through the fiscal year); in Iowa and Virginia, the grounds were life endangerment, rape and diagnosis of a severe genetic defect in the fetus. These last two states funded 52 abortions in FY 1985; the other four states paid for no abortions.

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Will Grandparent Liability Help Curb Teenage Pregnancy?

By Patricia Donovan

In November 1985, the state of Wisconsin enacted comprehensive legislation designed to reduce the need for abortion, particularly among teenagers, by focusing primarily on the prevention of pregnancy and the promotion of adoption as an alternative to abortion.

The Abortion Prevention and Family Responsibility Act,[1] drafted by a committee whose members represented a broad spectrum of views on the abortion issue, has received considerable national attention. The committee's success in finding common ground among the supporters and opponents of legal abortion has been hailed as a notable achievement. However, the law itself has stirred controversy because it contains a provision that makes the parents of a dependent minor financially responsible, under certain circumstances, for the minor's offspring.

For some years preceding the unanimous adoption of the law, the Wisconsin legislature had found itself unable to pass any abortion-related legislation because activists on either side of the issue were able to defeat bills they did not like. "We killed their bills, and they killed ours," points out Judith Selle, director of public affairs at Planned Parenthood of Milwaukee.[2] Frustrated by the stalemate, State Representative Marlin Schneider, a self-described "middle-of-the-roader"[3] on abortion, asked the legislature to appoint a Special Committee on Pregnancy Options to consider ways to reduce the need for abortion "within the present constitutional framework."[4] He also requested that the committee be composed of an equal number of supporters and opponents of legal abortion. The legislature agreed and asked Schneider to serve as chairman. Among the committee's 20 members were Selle; Elinor Yeo, director of the Milwaukee Women's Health Organization; representatives of the Wisconsin Catholic Conference and the diocese of Milwaukee; and a Catholic priest. A born-again Christian, a retired obstetrician-gynecologist who had performed abortions, representatives of Jewish and Lutheran groups and an adoption advocate were also on the committee. (Schneider says the lobbyist for Wisconsin Citizens Concerned for Life* was asked to join the committee but refused.) "It was like trying to negotiate between the Sunnis and the Shiites in Beirut," according to Schneider.[5]

Over the course of nearly a year, the committee reached agreement on a compromise proposal that reflects the determination of prochoice advocates to emphasize prevention of teenage pregnancy through sex education, school-based clinics and easier access to nonprescription contraceptives, as well as the efforts of antiabortion members to win increased support for maternity homes, adoption services and natural family planning methods. Bringing the two sides together was important. According to Representative John Medinger, a member of the committee and a strong opponent of abortion, "Planned Parenthood is not doing the devil's work [and] we came to realize that prochoice and prolife advocates can find a common ground."[6]

For the most part, all the special committee's recommendations were included in the final legislation. The law has 10 provisions.

- It establishes an Adolescent Pregnancy Prevention and Services Board within the Wisconsin Department of Health and Social Services (WDHSS) to make grants to organizations that provide pregnancy prevention

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*Wisconsin Citizens Concerned for Life subsequently changed its name to Wisconsin Right to Life.

programs and pregnancy services, and allocates $1 million for the operation of such programs in the first two years. Among the programs and services eligible for funding are residential facilities for pregnant adolescents, school clinics, a statewide media campaign on adolescent responsibility, and adoption counseling. Grant monies may not be used to purchase or dispense contraceptives in school-based clinics, to provide abortions or to advertise abortion services.

- It requires the WDHSS to establish a state adoption center to increase public knowledge of adoption and to promote the availability of adoption services among pregnant adolescents and older women. The center is responsible for training counselors of adolescents to provide adoption counseling in schools, family planning clinics and child welfare agencies; operating a toll-free telephone number that individuals can call for information and referrals; distributing pamphlets that provide information on the availability of adoption services; and promoting adoption through the media.
- The law repeals prohibitions on the advertising and display of nonprescription contraceptives and on the sale of such products by anyone other than pharmacists, physicians and professional nurses. The law had extended an existing prohibition on vending machine sales, but subsequent legislation lifted that restriction.
- It expands Wisconsin's current program for school-age mothers to include school-age fathers, and requires the program to teach parenting skills and to provide family planning services (including natural family planning) and information on adoption.
- The law requires each local school board to establish an advisory committee—composed of parents, clergy, school administrators, teachers, students, health care professionals and other residents of the school district—to develop a human growth and development curriculum; however, the local board has the right to decide whether to implement the program, and parents may keep their children out of the program. The statute specifies that the curriculum may include instruction in "human sexuality; reproduction; contraception, including natural family planning; prenatal development; childbirth; adoption; available prenatal and postnatal support; and male responsibility."
- The legislation requires a woman's informed consent to abortion after she has been told about the risks involved, the gestational age of the fetus and the public and private agencies that provide birth control information, adoption services and assistance during and after the pregnancy. Hospitals and clinics are required to "strongly encourage" a minor who wants an abortion to consult with her parents; the institutions must also inform the minor that county social services agencies will help her notify her parents.
- It establishes criminal trespass to medical facilities as a misdemeanor punishable by a maximum $1,000 fine or imprisonment for 90 days or both.
- It repeals penalties imposed on a woman for obtaining an abortion (contained in an old, unenforced Wisconsin law that had never been removed from the statute books), but subjects the physician to a $10,000 fine for performing an abortion after fetal viability, unless the procedure is necessary to save the woman's life or health. Abortions carried out after viability must be performed in a hospital, and the doctor must use the method most likely to preserve the life and health of the fetus, unless that method increases the risk to the woman.
- It stipulates that every group disability insurance policy that includes maternity coverage must provide such coverage for all persons covered under the policy.
- Finally, the new law makes the parents of a dependent minor who has a child financially responsible for their grandchild to the extent that they are able to support the child and the minor is not. The provision applies to both maternal and paternal grandparents.

The law, which took effect January 1, 1986, differs in three important respects from the special committee's proposal. The latter would have required all school districts to offer a human growth and development program from kindergarten through high school and to include instruction in reproduction, contraception and pregnancy services in the program. The bill enacted allows school districts to exercise discretion in choosing whether to implement a sex education program.

Another important change involves the power of the Adolescent Pregnancy Prevention and Services Board. The special committee had proposed that the board be an advisory body and that the WDHSS distribute the grants. Under the law, however, the board is given the power to distribute the grants. The board's six voting members are selected by the governor from nominations made by statewide organizations, and must represent "an equal balance of points of view on pregnancy prevention and pregnancy services." According to Planned Parenthood's Selle, eligibility for board membership is determined almost exclusively by one's position on abortion rather than one's experience in dealing with teenage pregnancy services and prevention. "Expertise is excluded from the process," she contends.[7] Three of the current board members were recommended by Wisconsin Citizens Concerned for Life, Feminists for Life and the Wisconsin Catholic Conference. The other three members were recommended by a coalition of women's rights and abortion rights organizations. The board distributed $500,000 in grants last summer; most of the funds went to community-based organizations having no prior involvement in pregnancy prevention.

The original draft of the law included a fine of up to $10,000 for criminal trespass to medical facilities rather than the maximum $1,000 fine finally written into the legislation. During the legislature's consideration of the bill, Wisconsin Citizens Concerned for Life and other antiabortion groups sought other changes, including the addition of a parental consent requirement. However, not wanting to be accused of sabotaging the legislation, these groups withdrew their objections to the bill after a representative from the Catholic Conference intervened to support it and Representative Schneider threatened to withdraw it if additional changes were made.

The Grandparent Liability Provision

The most controversial provision of the new law is the grandparent liability provision. Representative Schneider, sponsor of the legislation and chief proponent of grandparent liability during the special committee's deliberations, believes that the prospect of having to provide financial support for their grandchild will be an incentive for parents—especially parents of boys—to talk to their teenage children about sexual responsibility and the consequences of sexual activity; such discussion will, he believes, lead to fewer teenage pregnancies and abortions. "We had to hit parents in the pocketbook to get their attention," says Schneider. He also contends that the law will transfer some of the burden of supporting the children of unmarried teenagers from maternal grandparents, who traditionally bear that responsibility, to paternal grandparents. Schneider acknowledges, however, that the intent of the law is also "to shift the burden away from the welfare system."[8]

Critics of grandparent liability, on the other hand, question whether this provision will have any appreciable impact on teenage pregnancy and abortion rates or on the collection of child support from paternal grandparents. They are concerned, moreover, that the provision could have far-reaching implications for the welfare eligibility of teenage mothers and for the visitation and custody rights of grandparents. These possible ramifications were apparently not considered when the legislation was being developed. "We wanted to address the issue of male responsibility," says Elinor Yeo of the Milwaukee Women's Health Organization. "The motivation was not bad, but it was very poorly thought out."[9]

Since similar legislation has been enacted in Hawaii and introduced in at least four other states* and is also under consideration in two more states†, it seems appropriate to examine how grandparent liability is being implemented in Wisconsin and whether it is likely to achieve the goals enunciated by its sponsor.

The Wisconsin law provides little guidance on how the grandparent liability provision is to be implemented. However, on January 16, 1986, the WDHSS issued regulations stating that determination of eligibility for and provision of Aid to Families with Dependent Children (AFDC), Medicaid reimbursements and food stamps "should not be delayed in anticipation of an infant receiving grandparental support."[10] (Children's rights and welfare rights advocates had feared that benefits would be withheld until the grandparents' liability was determined.) Under federal rules, which are not affected by this law, when a minor mother is living with her parents and the parents themselves are not receiving welfare, their income is considered available to her and her child for purposes of calculating AFDC eligibility and benefits; if the young mother is not living at home, the parents' income is not considered available to her unless there is an actual payment.

The effort to seek child support from grandparents can be initiated only by a county social services agency, which is most likely to act after a young mother has moved out of her parents' home and has applied for AFDC. If the agency believes that the grandparents can provide support for the grandchild, it may ask the local district attorney to seek a court order compelling support. The district attorney must act within 60 days of receiving such a request. The level of the grandparents' support obligation can be set only by a court on the basis of their ability to pay.[11] If the court orders support payments for the child of an AFDC-eligible teenage mother, they are to be treated like any other child support payment: The first $50 would be distributed to the mother and her child and the remainder would be used to reimburse state and federal welfare costs. The payments will not reduce the size of the AFDC grant (except in the rare instance when the support payment is greater than the state's welfare payment of $463 a month for a mother and one child; in that case, the support goes directly to the young mother through the court in lieu of public assistance). Grandparents are not liable for welfare benefits paid before a support order is issued.

The law applies to all dependent minors, including those who are married, but the WDHSS regulations note that it is "possible that given the history of common law interpretations [which have determined that minors are emancipated by virtue of marriage and thus no longer dependent on their parents], the courts could decide that the parents of *married* minors are not affected."[12] Grandparents are not liable if they have formally terminated their parental rights over the minor child. This does not mean, however, that grandparents may avoid financial responsibility for their grandchild by ordering their daughter or son to leave home; there must be a formal court order terminating their parental responsibility.

The regulations stress that maternal and paternal grandparents are "equally liable" for child support, although the paternal grandparents do not have to pay support until there has been " a formal finding of paternity." The regulations note that the law appears to provide no mechanism whereby one set of grandparents can sue the other set for child support.[13]

An important issue not addressed by either the law or the regulations is responsibility for the medical expenses of a child whose grandparents are ordered to provide financial support. "It was a big problem that we didn't think about," admits Schneider.[14] To rectify the omission, supplementary legislation was enacted requiring courts that enter grandparent support orders "to assign responsibility for, and direct the manner of, payment of the child's health care expenses."[15] (If the mother and child are AFDC recipients, they are automatically eligible for Medicaid. The Wisconsin law does not make clear whether grandparent liability extends to reimbursement of some of the state's Medicaid expenses. However, some of the bills introduced in other states specifically provide that grandparents may be required to repay part or all of the state's medical assistance payments.) If the grandparents are deemed liable for the child's medical expenses, their liability includes the expenses associated with childbirth, regardless of whether these were incurred before a determination of paternity; however, the court may limit the grandparents' liability if their grandchild's medical expenses exceed five percent of their federal adjusted gross income for the previous year. The legislation also provides that if a parent's disability insurance policy covers any dependent child, it must provide the same coverage for all offspring of that child until the child reaches age 18.

A Court Challenge

The first support order under the law was issued in April. Jean Mayberry and her former husband, Donald Lueptow, the maternal grandparents of a 15-month-old boy, were each ordered to pay $30 a month to support their grandson until his unmarried mother reaches the age of 18. The grandparents challenged the ruling on several grounds. They argued, first, that they should not have to pay support because their grandson was born seven months before the law was enacted. "Given the legislature's intent to curb teenage pregnancy and abortion by giving parents a financial incentive to counsel their children on appropriate sexual behavior, it makes little sense to apply the law here, where the minor had already given birth by the time the legislature promulgated the law," the grandparents' brief maintained.[16] In addition, Mayberry and Lueptow claimed that they were willing and able to support their daughter and grandchild in their respective homes, but that the daughter had left her mother's home secretly to live with her 24-year-old boyfriend and refused to return. They argued that the legislature did not intend for parents "to subsidize the voluntary decision of minor children" to leave home. They contended that "the legislature's intent—reducing pregnancy and abortion among minors through parental responsibility—would be frustrated if minors could set up their own households against their parents' wishes and still count on grandchild support."[17]

The grandparents further asserted that the order should be set aside because they were ordered to pay support before the ability of the baby's father to support the child was determined. (The baby's father was ordered to provide support.) Their brief also contended that Mayberry's and Lueptow's constitutional right to equal protection was violated because the *paternal* grandparents were not required to contribute support. This was because the infant's father was over 18 at the time his child was born. "There is no rational basis for distinguishing between maternal and paternal grandparents given the legislative intent behind the [law]. There will be precious little prevention and responsibility if one-half of the problem, the father, can escape the influence that could be exerted by one-half of the solution, the paternal grandparents," they argued.[18]

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*Connecticut, Michigan, Minnesota and Nebraska.

†In Maryland, the Governor's Task Force on Teenage Pregnancy recommended that grandparent liability be enacted. The proposal is under study. In Utah, the legislature established a committee "to study whether parents should be responsible for the costs of their minor children's pregnancy and care of the baby." (See: Utah, HJR 40, approved Feb. 26, 1986.)

In September, the state voluntarily withdrew its petition for a support order against Mayberry and Lueptow and asked the court to order that the money they had paid since April be returned to them.[19] Even before the court's dismissal of the support order, it appeared likely that the order would be set aside on technical grounds rather than for constitutional reasons. In the past, constitutional challenges to family responsibility laws have rarely been successful.

"Grandparent liability was not invented in Wisconsin," New York University Law School professor Sylvia Law notes. "Thirty years ago, it was common for a state to inquire if grandparents could make payments for a grandchild in need of support. . . . The states were pretty free to impose financial responsibility on whatever relatives they wanted to. Constitutional challenges to such laws were almost always unsuccessful."[20]

The situation began to change in the mid-1960s, however, after Congress established the Medicaid program: The legislation prohibits making eligibility conditional on levels of support from family members, except for support provided by a parent for a minor child and by a spouse for a spouse. "That was a big liberal change," says Law. "The states tended to follow the Medicaid statute and to limit the number of relatives who could be held financially responsible." Another reason for the change, Law adds, "was the recognition that the extended family with a sense of obligation to one another was a thing of the past."[21]

In the last few years, however, the pendulum has begun to swing back toward emphasizing greater responsibility for family members. Diane Dotson of the American Bar Association points out that there is an increasing trend to make families responsible for their members, to make stepparents responsible for a minor child, to make parents responsible for an incompetent adult child, and to make an adult child responsible for destitute parents. But, she notes, "the Wisconsin law is still a departure."[22]

The theme of family responsibility is central to the Wisconsin law as well as to the grandparent liability legislation that has been passed in Hawaii and introduced in other states. The committee report accompanying the Hawaii law, for example, declared that the burden of supporting the children of unmarried minors should be on the minor and his or her family, "not the taxpayers."[23] Similarly, Michigan State Representative Floyd Clack says that his grandparent liability proposal is intended "to shift the burden of supporting children of unwed teens from the state to the families of the mother and father," and thereby force "responsibility where responsibility used to be, and that is on the families."[24]

Some family law experts are concerned that if grandparents become financially liable for their grandchild, they will gain increased rights of visitation and custody, even over the teenage mother's objections. (A grandparent liability proposal that has been introduced in Michigan specifically states that grandparents can seek a visitation order if they are ordered to pay support for their grandchild.) "Financial support does not necessarily give grandparents visitation and custody privileges, but I fear that is the next step," says Laurie Woods, director of the National Center for Women and Family Law in New York City. "Girls have parental rights terminated because they can't take care of the baby. . . . The trend is, if you have the money, you get custody."[25]

Most grandparents probably do not want custody, but several experts note that problems might arise if the paternal grandparents are ordered to provide support for the child of a young mother they do not know. There is "some reason for concern that if the father's parents are ordered to pay child support, they will urge him to seek custody so they don't have to pay the money to someone else," says Nancy Pollicoff of the Women's Legal Defense Fund in Washington, D.C. "I don't think we want to see custody decisions made on that basis rather than on [the basis of] what is the best interest of the child."[26]

Will Grandparent Liability Have an Impact?

Grandparent liability, according to an analysis prepared by Wisconsin's Special Committee on Pregnancy Options, will rectify the common situation where "the male and his family escape any responsibility" for the care and support of the child born to an unmarried teenager.[27] In practice, however, the law may not achieve this objective in a large number of cases. Nationwide, 40 percent of fathers of babies born to teenage women are over the age of 18 at the time of the child's birth.[28]

Furthermore, the process of establishing paternity can be so lengthy that the father often turns 18 before the issue is settled. According to John Hartman, the attorney in the Dodge County district attorney's office who handled the Mayberry-Lueptow case, paternity actions typically take a year to complete when paternity is contested. If the man denies he is the father, he and the child must undergo blood tests to confirm his claim. However, the state normally waits 6–8 months before conducting the test on the child. If the test results indicate that the man is probably the child's father, the case is heard by a judge, usually after another 3–4-week wait. (Should the man, during the hearing, produce another man who claims to have had intercourse with the mother around the time of conception, another blood test must be ordered and another hearing held—adding at least another month to the paternity determination process.) If, after a hearing, the court believes the man is the father, it will advise him to acknowledge paternity; he is free to disregard the recommendation, however, and to ask for a jury trial, which further extends the process. "I can see the boy's parents . . . bringing in a high-priced lawyer from Milwaukee or Madison and dancing us through the hoops as long as possible," says Hartman.[29]

Tom Kaplan, an analyst with the state's Division of Policy and Budget, believes that there may be "some extra [support] collections, but the main importance [of the grandparent liability law] is as an expression of social responsibility."[30] Even when a support order is issued, it may be difficult for the state to collect payments from grandparents. In FY 1984, child support was collected for less than 11 percent of the national AFDC caseload.[31] "Fathers don't like to pay support because it is paid to the state [as partial reimbursement of the state's welfare costs] and they see no benefit for the child," notes Barbara Savage of the Children's Defense Fund.[32] She finds no reason to believe that grandparents will react any differently.

There is considerable disagreement over whether grandparent liability will result in fewer teenage pregnancies and abortions. "Fear of pregnancy does not seem to deter young teens from having sex, and it is hard to imagine that an esoteric law will have any effect," says Yeo of the Milwaukee Women's Health Organization.[33] "How can this law counter all the songs and movies, and stars having out-of-wedlock babies? . . . What we need are movies on how tough it is to be a teenage parent."[34] In the long run, Yeo observes, "the only program that will prevent teenage pregnancies is one that shows kids a future. Incentives to avoid pregnancy are extremely complicated. They relate to goals and a view of self and what the teenager wants to do in life."[35]

Some observers think the law could actually lead to more, not fewer, abortions among teenagers. "There is the risk that some parents, knowing about financial liability, will be more inclined to press the minor to have an abortion," notes Abigail English of the National Center for Youth Law in San Francisco. Legally, they can't compel her to have an abortion, but they can apply strong informal pressure."[36] Antiabortion groups have expressed similar concerns, and the National Right to Life Committee has come out against the measure.

Schneider, on the other hand, claims that the impact of the measure can already be seen in the increased numbers of teenage boys who are going to family planning clinics for contraceptive services. He says they are being sent by their parents. Judith Selle acknowledges that there has been "a slight increase" in the number of males accompanying their partners to her Planned Parenthood clinic, but she attributes the increase to the greater attention that is now focused on pregnancy prevention generally, not to the grandparent liability provision. She further contends that there has been no increase in males who come to the clinic for birth control.[37]

Some believe the concept of grandparent liability to be a legitimate basis for public policy, regardless of its impact on teenage pregnancy. For example, the Reverend J. Thomas Finucan, a Roman Catholic priest and member of the special committee, notes that "parents are, in fact, responsible for the acts of their minor children, so to extend that principle to this area seems to me very logical."[38]

Others wonder, however, if the concept of grandparent liability conflicts with federal laws and many state laws guaranteeing minors the right to confidential family planning services. "If parents are responsible for the procreative behavior of their minor children, then financial responsibility for their behavior is legitimate," says Robert Veatch, an ethicist at the Kennedy Institute for Ethics at Georgetown University in Washington, D.C. "I have no objection in principle to that policy." But, he adds, it is "hard to argue on the one hand that parents are totally uninvolved in a minor's decision [about contraception] and to say, on the other hand, they are financially responsible for his or her behavior. There appears to be a logical inconsistency." Veatch is "sympathetic to incentives" to influence people's reproductive behavior if they are applied fairly.[39] Sylvia Law is also concerned about fairness. "There is nothing wrong with society's asking families to be responsible for their members; the problem with relative responsibility rules in the past is that they were applied in a harsh and unfair way to poor people."[40]

Whether Wisconsin's grandparent liability measure will have any appreciable impact on teenagers' sexual behavior or on the state's ability to recoup some of its welfare expenditures is not likely to be known for some time. However, the law requires the WDHSS to report on the impact of the grandparent liability measure before January 1, 1989. Twelve months later, the grandparent liability provision will go out of existence unless it is extended by the legislature.

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DIGEST

Three New Studies Produce Conflicting Findings On Link Between Pill Use and Later Breast Cancer

The long-debated question of the relationship between pill use and a woman's risk of developing breast cancer seems no closer to resolution after the recent publication of three major case-control studies. The largest of these, which involved more than 9,300 U.S. women and was undertaken by the Centers for Disease Control (CDC) and the National Institute of Child Health and Human Development (NICHD), finds no increased risk of breast cancer among pill users, even among those who relied on the method for 15 or more years and among those who started using oral contraceptives before their first term pregnancy.[1] (Previous studies have suggested that such women might be at special risk.[2]) An analysis of more than 1,300 New Zealand women appears to bear out many of the U.S. results, but finds a statistically nonsignificant doubling of breast cancer risk among 25–34-year-old women who ever used the pill.[3] Finally, research involving more than 1,100 Norwegian and Swedish women finds a significantly elevated risk of breast cancer among women who used the pill for 12 or more years and among those who used oral contraceptives for eight or more years before their first term birth.[4] In a commentary that was published in conjunction with the report of the New Zealand study, a pair of researchers conclude that despite the many studies that have been conducted in the past few years, "we cannot say with any certainty that the pill used for long periods early in reproductive life is, or is not, associated with a change in the risk of breast cancer."[5]

Hormone levels are known to play a part in the development of breast cancer;[6] thus, it is not surprising that there has been concern over the part that the pill might play in the disease's appearance. This concern was heightened several years ago when a study found that women who had used pills containing "high-potency" progestins at a young age might have a higher-than-normal risk of breast cancer.[7] Other research suggested that women who had used the pill before carrying their first pregnancy to term might also be at excess risk.[8] On the other hand, several additional studies found no relationship between the development of breast cancer and women's use of oral contraceptives.[9] In a 1985 *Lancet* editorial that summarized the situation at the time, the author concluded that "It is to be hoped that . . . current epidemiological studies will throw some light on this confused area and [produce] concrete information on the biology of this enigmatic disease."[10]

The CDC Study

To clarify the relationship between hormone use and the risk of a number of types of cancer, the CDC and NICHD began a large case-control study in 1980 called the Cancer and Steroid Hormone Study (CASH). As part of that research, 4,711 women 20–54 years of age were recruited from around the United States; all had been diagnosed between December 1980 and December 1982 as having primary breast cancer. The use of contraceptive hormones among the cases was contrasted with that among 4,676 women who served as controls. The controls were recruited by telephone (using random-digit dialing) from the same geographic areas from which the cases came. Each participant was interviewed in person; in order to help the women recall their experience with the pill accurately, the interviewers showed them a book containing photographs of all the oral contraceptives that had ever been marketed in the United States, and used a calendar of important life events (marriage, for example, or the birth of a child).

Overall, women who had ever used the pill were just as likely to develop breast cancer as those who had never used it (a relative risk of 1.0); those who had used the pill for 15 or more years were significantly less likely than never-users to develop the disease (relative risk of 0.6). However, there were no apparent trends in risk by successive durations of pill use, even when the data were adjusted to account for the time that had elapsed since a woman stopped taking the pill. Women who had begun using oral contraceptives before their first term pregnancy were no more likely to develop breast cancer than were women who had never used the pill (relative risk of 1.0). Nor was there any pill-related excess risk of breast cancer associated with a woman's menopausal status or her family history of breast cancer. Pill users who had had surgery for benign breast disease had a 0.7 relative risk of developing breast cancer; pill users who had never had such surgery had a relative risk of 1.0.

Compared with women who had never used oral contraceptives, women who had relied only on the combined pill had a breast cancer risk of 1.0; those who had used the sequential pill ran a risk of 0.8; and those who had used the progestin-only pill, one of 1.3. None of these relative risks was statistically significant. Furthermore, the investigators found that no specific pill formulation was related to a significantly elevated risk of breast cancer. Women who had taken only oral contraceptives containing mestranol and those who had relied only on formulations containing ethinyl estradiol ran the same risk of developing breast cancer as women who had never taken the pill: For each group, the relative risk was 1.0, a level that did not change with increasing estrogen content. Nor was the dose or type of progestin at all related to the risk of breast cancer. The investigators also found no important effect on breast cancer risk of the duration of exposure to various levels of progestins: For example, women who had been exposed to 150 or more mg-months of norethindrone were no more likely to develop breast cancer than were those exposed to fewer than 25 mg-months of norethindrone.

The investigators report that they were able to minimize most sources of bias in their study. Diagnostic errors among breast cancer patients were not likely to have affected the results, and the potential for information bias was reduced by the use of both the book illustrating the various brands of oral contraceptives and the life-events calendar. Results were adjusted individually for a number of potential confounding factors—among them, parity, age at menarche, age at first full-term pregnancy and frequency of use of medical services—and in no case was there any significant change in the relative risks. In addition, the data were adjusted simultaneously (using logistic regression procedures) to account for parity, age, geographic region, menopausal status, family history of breast cancer, age at first full-term pregnancy and pill use after surgery for benign breast disease. Again, the relative risks were unaffected.

The New Zealand Study

A total of 433 women 25–54 years of age who were diagnosed as having breast cancer between July 1983 and June 1985 were contrasted with 897 women drawn from the country's electoral rolls. All were interviewed by phone. The researchers adjusted their analyses for differences in breast cancer risk according to age at menarche, age at first birth, number of lifetime births, history of surgery for benign breast diseases and family history of breast cancer.

Pill use in New Zealand is high: Seventy-two percent of the cases and 79 percent of the controls had ever used oral contraceptives. The overall risk of breast cancer among women who had ever taken the pill was 0.9. Ever-users aged 35–44 and 45–54 also had relative risks of 0.9, but those aged 25–34 were found to have twice as high a risk of breast cancer (2.2) as women who had never used the pill. Women who had taken the pill for 10 or more years had a relative risk of 4.6. However, none of these findings was statistically significant.

Among women who had begun taking the pill before age 20, the relative risk was 0.84, comparable to that for women who had first used the pill after age 25 (0.91); among those who had started between ages 20 and 24, the risk was 1.0. Among study participants who had begun pill use before their first term pregnancy, the relative risk was 0.83; it was 1.1 among such women who had first used the pill before age 25. Furthermore, analysis found no increase in breast cancer risk associated with the time elapsed since a woman had started taking the pill: For example, among women who had used the pill for 2–5 years, the relative risk of breast cancer for those who had begun pill use 10 or fewer years before the study was comparable to the risk for those who had initiated use 15 or more years beforehand (0.88 and 0.87, respectively).

The study's results, according to the investigators, "provide no support for the hypothesis that use of the pill at young ages (or before the first pregnancy) increases the risk of breast cancer." They add that the statistical power of their study was high, especially since the pill is so widely used in New Zealand. They concede that "we may have to wait many years before the final word can be written about the possible carcinogenic effects of oral contraceptives," but conclude that "it seems unlikely that [oral contraceptives] have any appreciable effect on the risk of breast cancer."

The Scandinavian Study

Since it is a legal requirement in both Sweden and Norway that all cancer diagnoses be reported to a central register, the breast cancer study in those countries is believed to have included nearly every patient under 40 years of age diagnosed as having breast cancer during a one-year period. The Norwegian cases totaled 105 women under age 40, each of whom was matched with a pair of controls born on the same date as the case. The Swedish cases consisted of 317 women under 45 years of age; each of these women was assigned a control born in the same month and year. In addition, the 196 cases under age 40 were assigned a second control, born around the same time, who had given birth to her first child within two months of the breast cancer patient's first birth. Nearly all of the women who served as either cases or controls in both of the countries were interviewed in person.

Overall, pill use is widespread in these two northern European countries: Eighty-one percent of Swedish cases, 77 percent of Swedish controls, 66 percent of Norwegian cases and 61 percent of Norwegian controls had ever used the pill. The investigators found no significantly elevated risk of breast cancer among women who had used the pill for 11 or fewer years. However, those who had done so for 12 or more years were twice as likely as never-users to have breast cancer, a statistically significant elevation of risk. When the Swedish cases under age 40 were compared with their controls matched for age at first birth, the same pattern was seen, although the doubling of relative risk was not significant. Logistic regression analysis uncovered a similarly elevated, significant risk by total duration of pill exposure.

The investigators found no significant relationship between the latency period (the elapsed time between a woman's first use of oral contraceptives and the diagnosis of breast cancer) and the risk of breast cancer once duration of use was controlled for. Furthermore, the relative risk of breast cancer appeared to be unrelated to the recency of pill use: Women who had been using the pill five or fewer years before the time of diagnosis were no more likely to have breast cancer than were never-users. The study also revealed no significant association between the risk of developing breast cancer and either the duration of pill use prior to age 25 or the age at which women had begun using oral contraceptives.

However, a significant association did appear between the duration of use prior to a woman's first birth and the risk of breast cancer: Among all women, those who had used the pill for eight or more years before their first birth ran twice the risk of breast cancer of never-users. Among the Swedish women younger than 40 who were matched for age at first birth, those who had used the pill for eight or more years before that birth were four times more likely than never-users to develop breast cancer.

According to the investigators, their findings "are suggestive of an association [of pill use] with an increased risk of premenopausal breast cancer" among long-time oral contraceptive users, although there is no indication that women who used the pill for seven or fewer years were at increased risk. They add that their results on the association between pill use prior to the first birth and subsequent breast cancer are "in principle not at variance" with earlier findings,[11] but point out that "the total duration of oral contraceptive use might be just as much associated with an increased risk of breast cancer as [is] oral contraceptive use before the first full-term pregnancy." The investigators suggest that pill use before the first birth may serve as a proxy variable for total duration of oral contraceptive use.

The Clash of Findings

"Scientists, family planners and general practitioners must be confused by the diversity of results now before them," an editorial in *The Lancet* asserted in 1985.[12] "If long-term oral contraceptive use in early life does affect the risk [of breast cancer]," the editorial continued, "it might show itself in terms of excess cases 10 or 20 years after exposure." Since the first group of women who began using the pill in large numbers when they were young may not yet be old enough to show an increase in breast cancer cases, the author of the editorial concluded, "we must interpret the present epidemiology with caution."

This view is being reiterated with the publication of the latest round of studies. The authors of a commentary in the *British Medical Journal* note that epidemiology is a "blunt tool" for studying the relationship between hormone exposure and the risk of breast cancer.[13] Neither they nor the author of a recent *Lancet* editorial[14] can find much fault with the CASH, New Zealand or Scandinavian studies; the commentary in the *British Medical Journal* characterizes all three analyses as "first rate."

To what, then, can these different findings be attributed? Patterns of pill use have varied between countries, and according to the editorial in the *British Medical Journal* young women in the United States may have adopted pill use slightly later than did European (and particularly Scandinavian) young women. However, the authors of the editorial point out that little is known about prescribing patterns in the Scandinavian nations, making differential results difficult to interpret. In addition, a pair of epidemiologists who served as consultants to the CASH study pointed out recently in a letter to *The Lancet* that the Scandinavian study demonstrated no increase in breast cancer risk among Norwegian women. Furthermore, Swedish women between 40 and 44 years of age who had breast cancer were twice as likely as controls to have told the investigators that they thought pill use might increase the risk of breast cancer. Thus, recall bias may have been a problem in this study. The epidemiologists also note that the Swedish investigators sent the study participants an introductory letter briefly describing "the aim and scope of the study"; thus, at least some of the women may have deduced the objective of the research. Consequently, there are several ways in which the Scandinavian results may have been biased.[15]

Furthermore, as the *Lancet* editorial makes clear, the real proof of an association is the discovery of a relationship between dosage and risk. Neither the Scandinavian nor the New Zealand study analyzed the data by type and brand of oral contraceptive. The CASH study found no association with dosage in its analyses of pill formulation, but the data on cumulative dose levels are described by *The Lancet* as "probably too simplistic."[16] The author of the editorial emphasizes that "much better data on the effect of different combination doses on the breast are essential."

Despite the results of the Scandinavian study, most of the commentators urge physicians to continue their usual prescribing practices. The chairman of Great Britain's Committee on Safety of Medicines states in a letter to the *British Medical Journal* that "the presently available information should not lead to any alteration of current practice regarding the use of oral contraceptives."[17] The authors of the editorial in the same journal conclude that "there is no reason to change our prescribing habits or our advice to women using the pill." Finally, the *Lancet* editorial advises that "oral contraceptives are the most reliable and acceptable method of contraception for young women, and when their use seems appropriate, the lowest possible dose of both estrogen and progestogen should be prescribed."

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Labor Market Rewards Women Who Postpone Families Till Later Ages

U.S. women are delaying childbirth until later and later ages, and now a Harvard economist demonstrates that the labor market is rewarding them for doing so. David Bloom finds that women who wait until age 27 or older to have their first child earn 36 percent more an hour than women who have their first child before age 22, and 18 percent more than those who first give birth at ages 22–26.[1] Most of the hourly wage differential is attributed to differences in education and years of work experience, but when women of similar education and work experience are compared, those who have their first child at or after age 27 still earn almost 10 percent more than women who give birth prior to age 22. However, being childless appears to confer little advantage over waiting until age 27 to give birth; childless women earn 34 percent more than do women who give birth before age 22, but after adjustments for education and work experience, their wages are only three percent higher.

Using reports from the Current Population Survey conducted by the U.S. Bureau of the Census, Bloom analyzed data for women aged 30–39 in June 1985 who had not given birth in the previous three years. (Women with more recent births were excluded because they are less likely than women with older children to be in the labor force and to be working full time.) The data were organized according to whether the women were childless or had had a first birth before age 22, at ages 22–26 or at ages 27 and older. To examine trends, Bloom compared data for women aged 40–59 in June 1985 (who were born prior to the end of World War II) with data for the 30–39-year-olds, who were born during the baby-boom years.

Women Aged 30–39

Among women aged 30–39, childless women are the most likely to be in the labor force (51 percent). The proportions for women with children range from 50 percent of those who had a first birth after age 26, to 61 percent of those whose first birth was prior to age 22; the reason for the slightly higher participation rate among the latter group may be that their children are older, and they are more likely to be widowed, separated or divorced than are the late childbearers. There are no major differences by age at first birth in the number of hours a week that working mothers work (an average of 34–36), but childless women have the longest workweek (averaging 39 hours). Late childbearers and childless women have more education than the other

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women—14 years, on average, compared with 13 years for women who first gave birth at ages 22–26 and 12 years for women who gave birth before the age of 22.

Approximately 45 percent of women in all four categories work in administrative positions. On the other hand, women who are childless are more likely than women who have had children to hold managerial positions (14 percent compared with 8–10 percent of mothers). Childless women and late childbearers are more likely to be in such professions as law and medicine than are women who first gave birth at ages 22–26 or before age 22 (21, 25, 17 and seven percent, respectively). Early childbearers are more heavily represented in service and blue-collar professions (approximately 20 percent) than are women who are childless or who waited until at least age 22 to give birth (approximately 12 percent).

There are striking differences in women's earnings by their age at first birth. The average hourly wage of women who had a first birth before age 22 is $6.84, compared with $7.87 among women who first gave birth at ages 22–26, $9.30 among those who waited until age 27 or older and $9.14 among childless women. Bloom attributes the slightly lower hourly wage of childless women to the fact that they are younger, on average, than are women who waited until age 27 to bear children (34 years of age, compared with age 36).

Multivariate Analysis

In a multivariate analysis that controlled for education, work experience and other indicators of human capital, Bloom found that women who waited until at least age 27 to give birth earn nine percent more than women who gave birth before age 22; the difference is statistically significant. Childless women earn about three percent more than women who had a first birth before age 22, but the difference is not statistically significant.

The data also show that managers, professionals and administrators earn significantly more than blue-collar workers with the same schooling and work experience (41, 31 and nine percent more, respectively), while service workers earn 25 percent less than blue-collar employees. An analysis of the data controlling for occupation as well as education and work experience finds that women who first gave birth after age 26 earn 11 percent more than women who gave birth before age 22. The difference is significant, as are the somewhat smaller differences between late childbearers and women who are childless or who first gave birth at ages 22–26 (the late childbearers earn seven and five percent more, respectively).

Managers are more likely than women in other occupations to be rewarded financially for being childless. Controlling for education and work experience, the analysis shows that childless managers earn 15–20 percent more than managers who are mothers, depending on the age at which the women had their first births. Among professionals, childless women are not more highly rewarded than are women who delayed childbearing. Compared with professional women who had a first birth before age 22, professional women who delayed a first birth until ages 22–26 earn 17 percent more per hour, those who delayed until at least age 27 earn 22 percent more and those who are childless earn 14 percent more. Administrative, service and blue-collar occupations are less likely than professional and managerial occupations to show wage differentials for childlessness and late childbearing, if education and work experience are equal.

Women Aged 40–59

When Bloom compared the data for women aged 30–39 with the data for women aged 40–59, he found that many of the labor market advantages that have accrued to the late childbearers in the baby-boom generation are not evident among the older women. Among mothers 40–59, hourly wages are approximately $7.80, regardless of age at first birth, and among childless women of that age-group, they are $9.00. This is true even though women who first gave birth at ages 22 and older have had as much education as childless women; both have had approximately 18 months more schooling than have women who gave birth before age 22.

Childless women in the older generation are no more likely to be managers than are mothers (approximately 10 percent of all four childbearing categories). Late childbearers among women aged 40–59 are less likely to be professionals than are late childbearers aged 30–39 (18 compared with 25 percent), but the proportion of professional women among the other three categories is approximately the same in both cohorts. Early childbearers are still more heavily represented in service and blue-collar professions than are the other three childbearing groups (approximately 21 percent compared with 15 percent), but the difference is not as large as in the baby-boom generation.

Another comparison finds that among older women, those who never married receive more pay than married women with the same education and work experience; this marital differential does not exist among the younger workers. There is little or no difference in hourly wages by age at first birth among older mothers, but women who are childless earn about six percent more than those who had a first birth before age 22, given the same education and work experience. However, if the comparison controls for occupation, too, childless women do not have significantly higher salaries.

Bloom concludes that women born during the baby boom who delayed childbearing are being rewarded for having done so, whereas older women are not as likely to be compensated for having postponed their families. Older women are rewarded for having remained childless, however, while childless baby boomers receive no more in wages than do women who waited until age 27 to have a family. Regardless of generation, observes Bloom, when women have the same education and work experience, childless women working in managerial positions earn the most per hour; they are followed on the wage scale by professional women who are late childbearers.

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Study Finds Possible Link Between Pill Use And Cervical Cancer

A new study raises concern about the possible relationship between pill use and the development of invasive cervical cancer.[1] The study finds an increased risk with increased duration of pill use and with the use of oral contraceptives high in estrogen. Among pill users, those who are under the age of 35, who have never used a barrier method of contraception, and who have a history of genital infections or abnormal Pap smears appear to be more prone to develop cervical cancer.

Between April 1982 and January 1984, hospitals in Birmingham, Chicago, Denver, Miami and Philadelphia that participate in the Comprehensive Cancer Patient Data System diagnosed 658 women as having invasive cervical cancer. Of these women (who were aged 20–74), 479 were interviewed and entered into the study as cases. Controls, matched for age and ethnic origin, were selected through random digit dialing within the telephone exchange of each eligible case.

The final size of the control sample was 789 women. Trained interviewers conducted home interviews with all cases and controls to obtain information on a number of variables, including contraceptive use; medical, reproductive and marital history; sexual behavior; and smoking status. The interviewers showed ever-users of the pill color photographs of all oral contraceptives ever marketed in the United States to aid them in their recall of specific brands.

Because the cases in the study tended to be somewhat older than the controls (an average of 47 vs. 44 years old), age-standardization was applied in all the analyses. Similarly, since the proportions of whites, blacks and Hispanics differed somewhat between cases and controls, the analyses were also adjusted for ethnicity.

Findings

Forty-four percent of the cases and 51 percent of the controls had ever used the pill. The risk of developing cervical cancer among ever-users was 0.8 relative to that of never-users. However, further analysis showed that women who had not had a Pap smear in the 10 years prior to diagnosis of the disease were at a fivefold to sixfold excess risk of developing cervical cancer. These same women were far less likely than women who had had recent Pap tests to have used the pill. As a result, nonusers with limited screening histories were overrepresented among the cases, and this fact could mask the true relationship between pill use and cervical cancer.

When the data were adjusted for interval since last Pap smear, number of sexual partners, age at first intercourse, education and history of nonspecific genital infection, ever-users of the pill were found to have a risk of 1.5 relative to never-users. Moreover, there was an increase in risk with longer use of the pill. The relative risk (RR) was 1.3 among women who had used the pill for five years or less, compared with 1.8 among those who had used it for 10 years or more. Women who reported using the pill within one year of diagnosis were at a higher risk of developing cervical cancer than women who had discontinued use earlier (RRs = 2.0 and 1.4, respectively). However, the risk did not vary according to age at first use of the pill or number of years since initial use.

The effects of pill use on the likelihood of developing cervical cancer were more pronounced among women under age 35 (RR = 1.7), those who had never used barrier methods (RR = 1.8), those with a history of abnormal Pap smears (RR = 2.6), and women with a history of nonspecific genital infections or sores (RR = 2.1). Nevertheless, when women who had used the diaphragm and who were partners of condom users were excluded from the analysis, the levels of risk were not altered. In addition, relative risk among pill users did not vary with age at first intercourse, number of sexual partners or years of smoking.

Eighty-seven percent of the cases were diagnosed as having squamous cell tumors and 13 percent, adenocarcinomas or adenosquamous carcinomas. The relative risk associated with use of the pill for 10 or more years was 1.6 for squamous cell tumors and 3.0 for adenocarcinomas.

The researchers found that women who had used high potency estrogen pills for five or more years ran a relative risk of developing cervical cancer of about 2.1 compared with nonusers. Women who had used this type of pill for 10 years or more had a significant excess risk of developing adenocarcinoma (3.9), but the investigators caution that this finding is based on only six cases.

The investigators believe that their findings are cause for concern, particularly because they are consistent with the results of two other recent studies.[2] Nevertheless, the researchers point out, not all previous investigations have found a positive association between pill use and cervical cancer. One study, conducted among pregnant women in Sweden, found that when sexual behavior, smoking and use of barrier methods were controlled for, there was no increased risk of cervical cancer among long-term pill users.[3] Only the number of sexual partners and smoking were found to be consistent risk factors. The Swedish study found no significant differences between users and nonusers in their screening histories.

Although the researchers acknowledge that the relationship between pill use and cervical cancer is complicated by potential confounding factors, in their study, sexual history did not substantially confound the positive association between pill use and cervical cancer. The association persisted even when analyses were restricted to women reporting only one sexual partner.

The mechanisms by which pill use might affect the development of cervical cancer are unclear.[4] The investigators cite research that suggests a number of hypotheses: The administration of hormones can result in histologic changes to the cervical epithelium; oral contraceptives may alter the progression rates of preinvasive lesions to more serious neoplastic states; and the pill might influence a woman's risk of developing cervical cancer by acting as a cocarcinogen with other agents such as cigarettes, herpes virus and papillomavirus infections. The researchers believe that the last theory is consistent with their findings of somewhat higher relative risks among women who had never used barrier methods and among those reporting a history of nonspecific genital infections.

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Contraceptive Prevalence In Rural Appalachia Is Similar to National Rate

Married women living in one of the poorest and most isolated parts of Appalachia are no less likely than U.S. women in general to be using some method of birth control, and are more likely to be using a modern, effective method. Overall, 83 percent of married, nonpregnant women 15–45 years of age living in a rural county in Kentucky practice family planning, and 87 percent of these contraceptive users rely on highly effective methods. Although married Appalachian women have somewhat larger families than the national average, they also are far more likely to be protected from pregnancy by sterilization, especially in the younger age-groups. The researchers who studied the women comment that "contemporary American values for limiting family size, as well as the knowledge, willingness and ability to utilize modern contraceptives, have now diffused [even] to this . . . isolated and socioeconomically disadvantaged rural area of the United States."[1]

Because of its geographic isolation, historically low level of development and high fertility, investigators chose a very rural county in Kentucky for a study of contraceptive practice among Appalachian women. The entire county had a population of fewer than 15,000 in 1980, its terrain is heavily mountainous and the roads in the area are poor. Mining and subsistence agriculture provide most of the area's employment. Of nearly 4,500 households in the county, there were 1,701 in which a married woman between 15 and 45 years of age was living with her husband.

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From these eligible households, the investigators took a random sample of 400 and, between 1980 and 1982, interviewed a total of 407 married women. The researchers also carried out follow-up interviews with about one-quarter of these women.

Findings

Residents of the area are poor and have low levels of education. The women reported that they had received a median of 11 years of schooling; 54 percent had never finished high school, and only eight percent had graduated from college. Twenty-four percent of the respondents had an annual family income of $9,000 or less, and another 19 percent had an income between $9,000 and $15,000. Seventy-two percent of the women described themselves as homemakers, 24 percent said that they worked outside the home and four percent said they were students or were unemployed. Ninety percent said that they lived within a 10-mile drive of a source of contraceptive care, and nearly all had access to a car.

Ninety-six percent of the respondents were not pregnant at the time of the survey. Of these women, 83 percent were practicing some method of birth control. Eighty-seven percent of current users relied on highly effective methods—sterilization, the pill or the IUD. The single largest group of current users (49 percent) depended on sterilization—38 percent on tubal ligation and 10 percent on vasectomy. The level of female sterilization seen in this rural county is higher than the overall U.S. rate: According to the 1982 National Survey of Family Growth, 25 percent of all currently married white women of reproductive age have been sterilized. Nationally, however, vasectomy is more common (16 percent of current use) than it is in this region of Appalachia.

Levels of pill and IUD use were also higher among Appalachian women than among married white women nationwide. Twenty-five percent of survey respondents who were using a method were taking the pill, compared with 20 percent of all current users around the country; likewise, 13 percent of Appalachian users were relying on an IUD, compared with just seven percent of all U.S. married users. On the other hand, the Appalachian respondents relied far less on most other methods—condom, diaphragm, spermicides, rhythm and withdrawal—than did married white women overall (13 percent of current users compared with 33 percent).

The investigators also found that the younger Appalachian survey respondents were much more likely to have been sterilized than were comparable women nationally: Twenty-six percent of 15–24-year-old Appalachian women had had a tubal ligation, compared with just 10 percent of all married white 15–24-year-olds. The most important reason for this differential is probably the substantially higher level of childbearing observed among young women in Appalachia. Married survey respondents between 15 and 24 years of age had had an average of 1.3 births, compared with 0.8 among all married white women; similarly, 25–29-year-old Appalachian women had had 1.9 births, whereas all married white women in that age-group had had an average of 1.4. As a result, the researchers point out, these women "may be more motivated to use highly effective and often permanent birth control methods at a younger age." The follow-up interviews conducted with a smaller number of the Appalachian women indicate that among couples in which either partner underwent sterilization, 32 percent did so when the wife was between 25 and 29 years of age; 39 percent, after having been married 5–9 years; 38 percent, after having had two children; and 56 percent, less than a year after their most recent birth.

Not only do married women in a particularly poor and isolated area of Appalachia demonstrate a high level of contraceptive use, according to the researchers, but "their overall pattern of contraceptive practice is quite similar to that of married couples nationally." Only the amount of reliance on vasectomy is smaller than that observed across the country, a finding that may indicate more conservative attitudes in this area of Kentucky about the husband's role in birth control.

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Study Finds Contraceptive Use in Great Britain To Be "Near Universal" and "Highly Effective"

Contraceptive prevalence seems unlikely to increase in Great Britain because that society is "rapidly approaching near universal, highly effective contraceptive usage," according to the author of an analysis of contraceptive trends in Britain from 1970 through 1983.[1] The analysis shows that while pill use has increased during the last decade among young women and among single women, it has declined among married women, who are turning increasingly to sterilization. The use of barrier methods has dropped sharply.

Data from Britain's 1983 General Household Survey* indicate that 75 percent of all British women aged 18–44 are using a contraceptive method, and another 12 percent are infertile, pregnant, seeking pregnancy or abstaining from sex. This leaves 13 percent of women who may be exposed to the risk of an unplanned pregnancy, although it is not clear from the data whether all of these women are currently sexually active. The author believes that the true proportion of women at risk of unplanned pregnancy may be less than 10 percent, and speculates that contraceptive use in Britain is reaching the saturation point. The 75 percent prevalence rate for 1983 compares with 68 percent in 1976.

Contraceptive use is higher among women who are married or cohabiting (83 percent) than among single women (50 percent). Nonetheless, the latter figure represents a sizable increase over the 40 percent of single women who reported using contraceptives in 1976.

Trends in Methods

The pill is the most commonly used contraceptive method in Britain; 28 percent of women were using it in 1983. However, this proportion represents a decline from 31 percent in 1975, as the result of a drop in use of the method by married women (from 28 percent in 1976 to 24 percent in 1983). Among young women and single women, pill use increased during the same period—from 41 percent of women aged 18–29 in 1976 to 47 percent in 1983 and from 33 percent of all single women in 1976 to 46 percent in 1983. A number of surveys done during 1970–1983 show that trends in pill use have not been consistent; use has fluctuated in response to publicity about the hazards and benefits of oral contraceptives.

The investigator calls the increasing use of sterilization "easily the most dramatic trend" in contraceptive practice since 1970. The proportion of ever-married women who rely on either male or female sterilization went from four percent in 1970 to 24 percent in 1983. The use of sterilization increases dramatically with age—from eight percent of women aged 25–29 to 28 percent of those aged 30–34 and approximately 40 percent of those 35–44. Reliance on sterilization also increases with parity, and it reaches a high point among ever-married women with three or more children, 49 percent of whom were relying on sterilization in 1983.

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*In 1983, the General Household Survey, which is similar to the Current Population Survey in the United States, introduced a limited number of questions on the use of contraceptives among women aged 18–44. The questions were requested by the Department of Health and Social Security.

The data also indicate that more and more female sterilizations are interval rather than postpartum procedures: While an estimated two-thirds of procedures were postpartum in 1973, the proportion was one-quarter in 1983. The author interprets this trend to mean that couples are now planning ahead for sterilization rather than waiting until an unwanted birth occurs.

In 1970, seven women had been sterilized for every three males. The ratio evened out during the period under study, and by 1983, roughly equal numbers of men and women had undergone sterilization. As with the pill, however, ups and downs in the sex ratio tend to occur in response to publicity about either vasectomy or tubal ligation. In addition, some class differentials in sterilization practice still exist: Men in white-collar occupations are more likely than their partners to have been sterilized, and men in manual jobs are less likely than their partners to have had the operation. However, these differentials diminished over the study period.

Use of the IUD increased between 1970 and 1983. Four percent of ever-married women—who are much more likely than single women to rely on this method—were using it in 1970, compared with eight percent in 1976 and nine percent in 1983. Only about two percent of single women were IUD users in 1983.

In 1970, half of all contraceptive users listed either the condom or the diaphragm as their method. By 1983, however, only 19 percent of users said they relied on those methods. Overall, 13 percent of all women reported that they were relying on the condom and one percent, the diaphragm. Four percent of women reported in 1983 that they used withdrawal, and one percent each cited rhythm methods and spermicides.

The author notes that at the beginning of the study period, gains in contraceptive use were achieved as barriers to services, particularly medical contraceptive services, were gradually eliminated. Contraceptive practice is now nearly universal, except perhaps among single women younger than 18, who were not included in the study. Considerations of efficacy and acceptability have now become more important than availability in determining which methods are the most popular, according to the article. While willingness to tolerate side effects has declined, expectations of high levels of protection have risen. Consequently, the likelihood that existing barrier methods will make a comeback in Britain seems slim, says the author. She speculates that the proportion of couples prepared to accept the permanence of sterilization might have a ceiling, but if reversal techniques were to improve, sterilization might become even more popular.

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Among Tiniest Infants, Rising Birth Weight Does Not Affect Disability Rate

The likelihood that babies with extremely low birth weights will die soon after birth decreases with increasing weight. However, among such babies who survive, the likelihood that they will be seriously disabled for life appears not to diminish with increasing birth weight. These rather complex relationships are spelled out in a recent study carried out in a hospital in Melbourne, Australia.[1]

The study, conducted between January 1977 and December 1983, analyzed the outcomes of 316 births of babies weighing only 500–999 g. Another 41 babies within the same weight range who were transferred from other hospitals to the center's neonatal intensive care unit were included in the analysis.

Mortality (stillbirths, neonatal deaths and perinatal deaths) was analyzed by 100 g weight intervals at birth and by year of birth. Survival and disability rates were calculated separately for males and females, singleton and multiple births, babies that were small for gestational age (SGA) and appropriate for gestational age (AGA), infants born at the hospital and those transferred from other locations, and year of birth. Disability was defined as cerebral palsy, blindness, deafness or developmental delay.

Findings

Stillbirth, neonatal mortality and perinatal mortality rates were significantly higher for the tiniest infants than for the heavier babies, and all three rates improved progressively with increasing weight. The perinatal mortality rate for infants weighing 500–599 g was twice as high as for babies weighing 900–999 g (889 per 1,000 stillbirths plus live births vs. 431 per 1,000, respectively), and was intermediate for infants who weighed 700–799 g (673 per 1,000). However, over the seven years of the study, the investigators observed no improvement in the overall perinatal mortality rate (which was 625 per 1,000 in 1977 compared with 700 per 1,000 in 1983).

The majority of infants who were born alive but subsequently died did so in the early neonatal period: Eighty percent of infant deaths occurred fewer than seven days after birth (64 percent occurred within the first 24 hours), 13 percent took place 7–27 days after birth, and seven percent, during the postneonatal period.

The one-year survival rate of the 261 babies who were born alive was 46 percent. There was a progressive increase in the survival rate for such babies from the lower to the higher birth weight groups: Eleven percent of the babies who weighed 500–599 g, and 67 percent of those who weighed 900–999 g, survived. The overall survival rate in 1981–1983, however, was identical to that in 1977–1980.

Although the overall survival rate for males was not significantly worse than for females, male babies who weighed 700–999 g were significantly less likely to survive than were females in the same weight category (48 percent vs. 71 percent). Seventy-six percent of SGA infants survived, compared with 43 percent of AGA babies. Multiple births had a significantly lower survival rate than singleton births (21 percent vs. 51 percent, respectively). Infants who were transferred from other hospitals before the onset of labor had a significantly higher survival rate than either babies born at the center or those who were transferred during labor (67 percent vs. 41 percent and 39 percent, respectively).

Twenty-nine percent of the survivors had at least one disability, and of this group, 23 percent had two disabilities. Sixteen percent had cerebral palsy; 14 percent experienced developmental delay; three percent were blind; and three percent were deaf. Disability rates were higher for males, SGA infants, multiple births and infants transferred from other hospitals, but none of these differences was statistically significant. Further, disability rates were similar for infants at each weight interval, as well as for babies born in 1977–1980 and those born after 1980.

Noting the lack of improvement in overall survival and disability rates during the study years, the researchers contend that the outcomes for infants cared for in the neonatal intensive care unit of the Melbourne hospital compare favorably with the results obtained at other hospitals in the region. They also point out that whereas the tiniest infants are more likely to die than are the heavier babies, the disability rates among survivors are

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similar for all weight groups. This, they conclude, demonstrates that providing neonatal intensive care to the smallest babies does not result in a disproportionately high number of seriously disabled survivors who would have died without treatment. The investigators also contend that because most of the infants with extremely low birth weights who die do so within the first week of life (and two-thirds of these within the first 24 hours), neonatal intensive care does not unduly prolong their suffering or necessitate the expenditure of massive resources to artificially maintain lives that are not salvageable.

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An Increasing Proportion Of Tubal Ligations Take Place in Outpatient Units

Voluntary sterilization continues to be the contraceptive choice of over one million Americans each year, and a growing number of sterilizations are performed in outpatient settings: Almost one-third of the tubal ligations performed in 1984 took place in outpatient facilities, a category of service included for the first time in the 1984 report of the Association for Voluntary Surgical Contraception (AVSC). Of the outpatient tubal ligations done in 1984, over three-quarters took place in hospital-based outpatient settings.[1]

Traditionally, the AVSC has collected data for its annual survey from the National Center for Health Statistics, which provides data on female sterilizations performed on hospital inpatients; from the National Disease and Therapeutic Index, which estimates the number of vasectomies performed by physicians in private practice; and from the various branches of the military, which report the number of tubal ligations and vasectomies carried out among military personnel and their dependents. In addition, the association has routinely conducted an annual survey of outpatient facilities nationwide, including independent family planning clinics, Planned Parenthood affiliates and a small group of freestanding surgical centers and hospital outpatient units.

To better monitor the increasing number of sterilizations performed in outpatient settings, in 1984 the AVSC expanded its data collection to include a random sample of 233 freestanding surgical centers (more than five times the number surveyed in 1983) and 1,499 hospital outpatient or ambulatory units. A total of 428 hospitals responded to the survey questionnaire.

The data indicate that an estimated 1,150,000 sterilizations were performed in the United States in 1984—419,000 vasectomies and 731,000 tubal ligations. The number of female sterilizations performed in hospital inpatient facilities declined by 14 percent, from 568,000 in 1983 to 488,000 in 1984. However, the AVSC researchers do not believe that the overall number of tubal ligations decreased in 1984, but, rather, that a large proportion were performed in hospital outpatient clinics and other ambulatory facilities. Based on the data collected from all sources (inpatient and outpatient), the investigators estimate that 31 percent of all female sterilizations were performed in outpatient settings in 1984. A total of 185,506 tubal ligations were performed in hospital outpatient facilities.

The number of vasectomies performed by private physicians declined by nine percent, from 412,000 in 1983 to 376,000 in 1984. However, the researchers note, the demand for vasectomies was unusually high in 1983, "largely [because] men had waited . . . for reassurances that vasectomies were safe and not connected to coronary heart disease or other systemic disorders." Thus, they believe, the pent-up demand had been met in 1983 and "it was not surprising that there were fewer vasectomies in 1984."

Male and female sterilizations performed in military facilities increased by more than two percent between 1983 and 1984. Family planning clinics performed 10,628 vasectomies and 7,048 female sterilizations. In addition, an estimated 6,012 vasectomies and 35,000 tubal ligations were performed in freestanding surgical centers. These last two estimates cannot be compared with 1983 figures because of the large number of newly identified surgical centers included in the 1984 survey.

The investigators believe that past estimates significantly undercounted the number of sterilizations performed every year in the United States, because procedures performed in outpatient facilities were underrepresented. All future estimates, the researchers advise, must take outpatient procedures into account.

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Infant Mortality Declines Overall, but Gap in Rates Persists Between Races

The U.S. infant mortality rate declined by 14 percent between 1980 and 1984, yet there was no narrowing in the differential between black and white rates, according to recent data from the National Center for Health Statistics.[1] The babies of black women continue to run a risk of dying in the first year of life that is double the risk for the infants born to white women.

In 1980, the infant mortality rate (the number of deaths per 1,000 live births) was 12.6. By 1984, it had declined to 10.8 per 1,000, the lowest U.S. rate ever recorded. The black rate in 1984 was 18.4 deaths per 1,000 (a 14 percent decline since 1980) and the white rate was 9.4 per 1,000 (also a 14 percent decline).

The infant mortality rate was highest in the District of Columbia (21.0 per 1,000) and Mississippi (14.4), and lowest in North Dakota (8.1 per 1,000) and New Hampshire (8.4), both states with very low proportions of black residents.

A slight, but persistent, differential exists worldwide between male and female infant mortality. This is also true in the United States, where the rate for boy babies was 11.9 per 1,000, compared with 9.6 for girls.

After congenital anomalies (which accounted for 22 percent of all infant deaths in 1984), the three leading causes of infant mortality are sudden infant death syndrome (crib deaths), respiratory conditions, and disorders relating to short gestation and low birth weight. When causes of death are examined by race, black infants are found to be 4.2 times more likely than white infants to die of intestinal infections, 4.0 times more likely to die of child battering, and 3.4 times more likely to die of disorders related to short gestation and low birth weight. However, there is virtually no difference between the races in the likelihood that infants will die of congenital anomalies.

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Special Report

The New Politics of Natural Family Planning

By Jeanette H. Johnson and Julie Reich

Increased interest in natural family planning (NFP) among international donor agencies has given new meaning to the old saw that "politics makes strange bedfellows." The attempt of moderate, scientifically oriented supporters of NFP to bring the method into the mainstream has led them to an uneasy partnership with traditional providers of NFP who, with their roots in the Catholic Church, are unwilling or unable to submit to the rigorous evaluation sought by the donors. The resulting philosophical differences were evident at the Fourth International Congress of the International Federation for Family Life Promotion (IFFLP), held in Canada in the summer of 1986.[1]

Background

In the 1960s, with the issuing of the papal encyclical "Humanae Vitae," the Catholic Church reaffirmed the teaching of periodic abstinence as the only moral and acceptable method of family planning. American Catholics and members of other groups sympathetic to that philosophy began to seek ways to improve the efficacy of the old rhythm method without involving drugs, surgery or appliances.

The task of redefining and developing more sophisticated methods of NFP might have remained more or less the province of these original supporters had not the emergence of the field coincided with an increased interest in NFP by the U.S. Agency for International Development (AID) and with the negative views of other methods of contraception shared by many antiabortion groups. Partly in response to pressure on the current U.S. administration by some of these groups, and partly because it is AID policy to make available to couples in developing countries the widest possible range of methods, the AID has become the single largest donor to NFP training and research in the world. AID funds devoted to NFP increased from $800,000 in 1981 to $7.8 million in 1985.[2]

Financial support of such magnitude was obviously welcomed by NFP providers, who had depended primarily upon volunteers working in small-scale, grass-roots programs. But a conflict quickly developed over the requirement that programs supported by U.S. government funds offer, either directly or by referral, a broad selection of contraceptive methods. In the past, the AID had denied support to any family planning program that offered only one method of birth control to the exclusion of all others. However, most programs that had been set up specifically to provide NFP (as opposed to clinics that simply incorporated NFP into their roster of methods) had traditionally refused to provide information about other methods of contraception, contending variously that they were immoral, dangerous and artificial.

So that these one-method programs would be eligible for the growing AID contribution to NFP, their supporters began to pressure the Reagan administration to exempt their projects from the information and referral requirement. In July 1985, the AID held for the first time that organizations that "provide only natural family planning services are not required to provide information on or referral to other methods of family planning."[3] The administrative decision was made despite protests from many medical, social, religious and family planning organizations, which claimed that a grantee's refusal to provide information on all methods of birth control violated well-established principles that attempt to ensure informed consent and voluntarism. They also argued that it is especially important that providers in the Third World furnish complete and accurate information, because access to other sources for family planning information and services is often quite limited.

Some members of Congress were disturbed over what they perceived to be administrative favoritism toward the supporters of natural family planning. In October 1985, when the Senate began considering foreign assistance appropriations for fiscal 1986, an amendment was attached to the appropriations bill that required U.S. government–assisted family planning programs to offer information and services for the full range of methods, either on site or through referral. The amendment passed easily.

Defining NFP

Even before the infusion of U.S. government funds, the NFP movement had been evolving considerably, moving from reliance on calendar rhythm to emphasis on techniques more finely attuned to female physiology. Calendar rhythm utilizes the average duration of a woman's menstrual cycle to provide a crude calculation of the fertile period, during which abstinence is required. The newer techniques teach the woman to observe bodily changes that signal impending ovulation and to set a period of abstinence geared to each particular cycle. Because these techniques are considered more sophisticated and effective than calendar rhythm, many NFP supporters object if such methods are referred to as rhythm, or even if rhythm is included under the umbrella of NFP techniques.

Among the newer techniques are the cervical mucus method (also called the ovulation or Billings method), the basal body temperature method and the sympto-thermal method. The cervical mucus method relies on changes in the consistency and volume of cervical mucus to signal the fertile period. When estrogen levels rise and peak just prior to ovulation, the mucus becomes slippery, clear and capable of being stretched between two fingers. In addition to learning to gauge these characteristics of mucus, women who use the method must learn to avoid confusing cervical mucus with other mucus-like substances, such as semen, lubricants and vaginal discharges due to infections.

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Basal body temperature is, by definition, the body temperature of a healthy person at rest, taken immediately upon waking and before rising, eating or drinking. This method rests on the observation that basal body temperature rises in response to hormone production following ovulation. By charting her temperature daily, a woman can learn to determine when she has ovulated. Temperature shifts can also be influenced by other factors, however.

The sympto-thermal method uses a combination of cervical mucus and basal body temperature to predict and detect ovulation, respectively, and may also incorporate other symptoms, such as breast tenderness and mid-cycle pain or bleeding. It is considered the most accurate of the variations on NFP. In general, the period of abstinence required by NFP techniques ranges anywhere from seven to 17 days in each cycle, depending on the method and the individual woman's cycle. Couples relying on the cervical mucus method who wish to prevent pregnancy generally have fewer than half the days of a woman's menstrual cycle available for intercourse.[4]

Because NFP methods require about three months of training, as well as daily recording of symptoms and willingness to abstain during the fertile period, recruitment to NFP programs is often difficult and discontinuation rates can be high. In the second half of the 1970s, a World Health Organization (WHO) study of the cervical mucus and sympto-thermal methods in Colombia enrolled 566 participants after a two-and-a-half-year recruitment period in two cities. After a year of training and follow-up, 23 percent of the couples in the sympto-thermal group and 28 percent of those in the cervical mucus group were still participating.[5] A later, five-country WHO study of the cervical mucus method found that 17 percent of women who enrolled dropped out during the three-month teaching phase of the study,[6] and another 36 percent discontinued use of the method in the year that followed.[7] Studies in the United States have shown similar recruitment and retention problems.[8]

The IFFLP Conference

In July 1986, the IFFLP held a conference in Ottawa, Canada, that focused on the teaching and practice of NFP throughout the world. The meeting attracted some 550 NFP researchers and teachers from 75 countries. The AID, the WHO, the United Nations Fund for Population Activities (UNFPA) and the Vatican were also represented.

The IFFLP was started in 1974 "to provide leadership, guidance and education in the fields of family life education in general and NFP in particular."[9] The organization has 17 projects in Africa alone, many the result of a 1983 agreement in which the AID provided $2.3 million for training, planning and evaluation over a five-year period. In 1984 and 1985, the IFFLP received two supplementary technical assistance grants of $500,000 each from the Agency. The IFFLP has agreed that, where appropriate, its subgrantees should provide information and make referrals for women requesting birth control methods other than NFP.

The IFFLP also collaborates with the WHO in research projects and has obtained some funding from the Canadian International Development Agency, the UNFPA, the Swiss Development Cooperation and various Catholic charities based in Belgium, France, West Germany and Italy.

The Canadian conference was divided into training workshops for NFP instructors, which were held in a seminary, followed by scientific sessions, held in a hotel. One of the scientific sessions concerned the prevalence of NFP. The only country-wide estimates available are based on data provided by the World Fertility Surveys and the Contraceptive Prevalence Surveys, reported Nancy Williamson, director of Natural Family Planning Research and Program Evaluation at Family Health International.[10] These surveys classify all methods of periodic abstinence as rhythm. Williamson presented data from 42 countries showing that the country with the highest prevalence of rhythm is Peru, where 41 percent of women practicing contraception use this method. The next highest prevalences—24 percent of users—are found in Sri Lanka and the Philippines.

Williamson acknowledged the inadequacy of equating rhythm with NFP; limited surveys in four countries have shown that what most women mean when they say rhythm is the calendar method of determining their fertile period. Another factor complicating the data, she said, is that many couples, in the Philippines and Sri Lanka particularly, use barrier methods during the fertile period. The AID-funded Demographic and Health Surveys, which will measure contraceptive prevalence in 35 countries over the next five years, will distinguish between various methods of periodic abstinence and should provide better data on the use of NFP, according to Williamson.

In the United States, the 1973, 1976 and 1982 National Surveys of Family Growth have shown that 4–5 percent of contraceptive users practice periodic abstinence, according to Jeffrey Spieler of the Research Division, Office of Population, AID.[11] He added, "We don't seem to have affected the prevalence rates as much as I would have expected, considering the greater availability of NFP programs [in 1982]. Maybe we are converting people from rhythm to NFP."

A question that was raised but left unanswered by the presentation of Evelyne Lapierre-Adamcyk, a demographer at the University of Montreal, is whether NFP can ever become popular in countries that have achieved or hope to achieve a low birthrate.[12] Canadian couples have made it plain in the last decade that they want no more than two children, she said, adding that such a low birthrate can be achieved only if couples regulate their fertility effectively. Lapierre-Adamcyk identified sterilization as the most popular method among married couples in Canada. She reported that a 1984 survey of women aged 15–49 in Quebec indicated that 22 percent had ever used a method of NFP, about the same level of ever-use as reported for the IUD but lower than the rates for most other methods. Only one percent said they had used natural methods exclusively.

Researchers from Georgetown University, which recently received a $15 million grant from the AID for a five-year research, training and technical assistance program on NFP, outlined a research project to test the theory that NFP may result in a high rate of birth defects and spontaneous abortions when the method fails, because the pregnancies could result from "aged gametes." The period of abstinence in NFP generally begins five days before the estimated time of ovulation because sperm are believed to survive in the female reproductive tract for at least three days. It continues for two days after ovulation because the ovum is estimated to be fertilizable for up to 24 hours following ovulation. If gametes survive longer than expected, or intercourse occurs on the fringes of the fertile period, pregnancies could result in which the sperm or ovum is an aged gamete. Animal studies have shown a higher rate of birth defects from aged gametes, but the data from one study in humans has failed to support the theory.[13]

A number of claims have been made that NFP, and the cervical mucus method in particular, allows couples to preselect the sex of their child by timing intercourse to coincide with the days in the fertile period when sperm carrying one type of sex chromosome are said to be more likely to prevail than are sperm carrying the other type. Leonie McSweeney, a physician working with the Pro-Life Association of Nigeria, presented preliminary results from a prospective study she had done with 27 couples, 26 of whom "had a child of the expected sex, giving us a success rate of 96.3 percent—21 boys and five girls."[14] She reported that "one couple who

(Continued on page 281)

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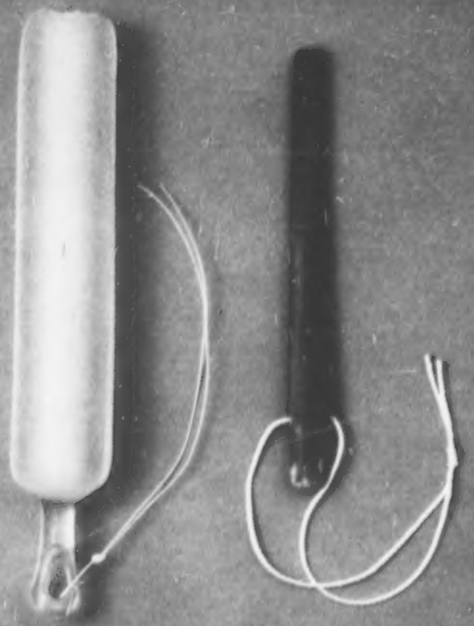

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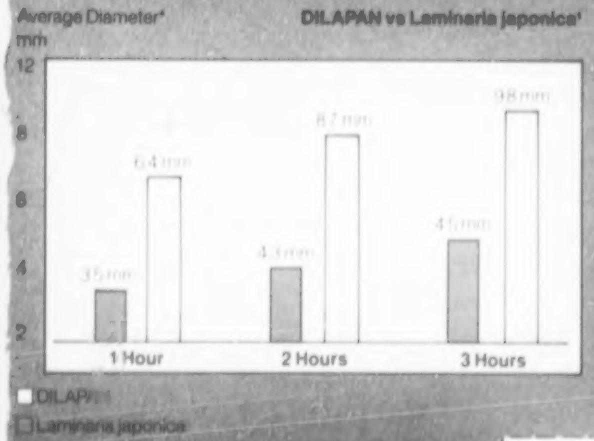

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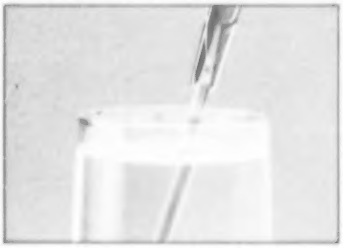

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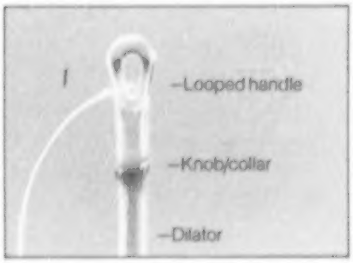

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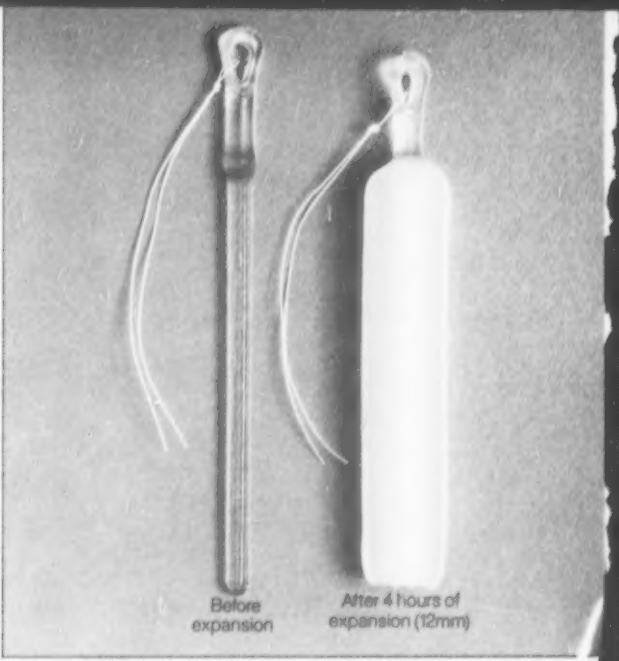

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kept the rules to have a baby boy instead had a girl. This was the only failure of the method in our survey." McSweeney said the results were from a pilot study, and the research would be expanded. A WHO study of 163 pregnancies published in 1984 could find no relationship between the timing of conception and the sex of the child.[15]

Several scientific sessions were devoted to breastfeeding, which has a contraceptive effect consistent with the NFP philosophy and is the focus of increasing attention by the IFFLP. Kathy Kennedy, a senior research analyst at Family Health International, pointed out that "in the developing world, breastfeeding provides more protection against pregnancy than all other family planning methods combined."[16] She stated that if breastfeeding women use no other forms of contraception, 5–10 percent will conceive during the period of lactational amenorrhea, and interpreted this statistic to indicate that lactational amenorrhea offers good protection to 90–95 percent of breastfeeding women. Kennedy cautioned, however, that because the duration of the protected period varies according to such factors as the amount, frequency and intensity of breastfeeding, it is extremely important to define what constitutes "full" breastfeeding. Given the lack of precise information on the effects of breastfeeding on ovulation, Kennedy suggested that NFP providers warn their clients that breastfeeding is not a foolproof protection against pregnancy.

Sara Millman of the Department of Sociology at Brown University said that although breastfeeding is often assumed to be on the decline worldwide, the data on which that assumption is based are thin.[17] Because data from two different time periods are not available for many countries, there are only a dozen for which trends can be plotted, she said. In most, the levels of breastfeeding are essentially stable, with small differences between time periods that just as often indicate an increase as a decline. In only three countries—Taiwan, Panama and Thailand—could she document a decline, and recent data from Thailand indicate that the level there may have stabilized.

Some Differences of Opinion

At several of the scientific sessions, a number of participants objected when other reversible methods of contraception were said to be more effective than NFP. Most scientifically accepted studies have shown NFP failure rates ranging from 11 to 35 percent a year.[18] Many conference attendees contended that method failures are almost unheard of and cited theoretical effectiveness rates as high as 98 percent. However, according to one researcher, the problem of comparing NFP effectiveness rates with those of other methods begins with the decisions made as to which women are to be included in the study. Most studies carried out by NFP program personnel have held that a woman is not an NFP user until she has completed a training program and shown that she can consistently chart her fertile period. This delay in establishing the enrollment point for a study screens out the less committed users and lowers the dropout rate subsequently.

In addition, some couples who have trouble coping with the periods of abstinence in each menstrual cycle "take a chance." Many program directors don't believe that pregnancies that result when NFP users "break the rules" should be recorded as failures. Consequently, their system of classifying pregnancies is not always consistent with that used for evaluating other methods. For example, in reporting data obtained from an NFP program being carried out at Pontifical Catholic University of Chile, Alfredo Perez said there were 124 pregnancies among 900 couples who had accumulated 5,740 months of use. Although only two of the women who got pregnant had entered the program to achieve pregnancy, Perez classified 52 of the pregnancies as planned because the couples had had intercourse when they were supposed to be abstaining. He reported only 11 of the remaining pregnancies as method failures, attributed 57 to user failure, and three to teacher failure, and said the reason for one failure was undetermined.[19]

Traditionalists within the movement claim that they are far more interested in the quality that NFP brings to a relationship than in its theoretical effectiveness. One of the most important attributes of NFP, according to these supporters, is that couples who use it have better marriages than do users of other methods because of the cooperation and communication between partners that are required. (In contrast, some speakers argued that surgical sterilization, especially, is an unacceptable way for couples to control their fertility because it provokes guilt and contributes to the breakdown of the marital relationship.) Several papers on the psychosocial aspects of NFP reported high satisfaction rates among users, as well as large proportions of users who felt that NFP had improved their marriages. None of the studies, however, included control groups that would have indicated whether levels of satisfaction with NFP are any higher than those associated with other methods.

Some supporters of NFP view their cause as more than a method of family planning: They see it as a philosophy of life that, in most cases, is tied closely to the scriptures and the teachings of the Catholic Church. The representative of the Holy See said that NFP is a laudable practice for those couples who "share the morality that originally inspired natural methods."[20] He urged the audience to emphasize values in the teaching and promotion of NFP, and added that "researchers have difficulty inserting this concept in programs."

John Kippley, president of the Couple to Couple League International, a lay organization that provides NFP training, stated that "the scriptures condemn everything but noncontraceptive intercourse."[21] He said he was distressed to see that one of the instructors at an NFP workshop was "a person who advocates perversities" during the fertile period. Perversities, he said, included the use of condoms and sexual gratification without intercourse. Kippley urged self-control during the fertile time so that "chastity in marriage" could be maintained.

Other participants at the conference maintained that such rigid moral advocacy would deter many of the people the movement is trying to reach. These more moderate proponents stressed that NFP is less costly to the couple than are other methods, is readily available to anyone, is immediately reversible, has the fewest side effects and places emphasis on spousal communication.

Conclusions

In the United States, many modern methods of birth control have recently been plagued by legal problems that threaten to restrict their availability and, further, to jeopardize the development of new methods. The extent to which these U.S. problems will affect contraceptive availability in other countries is not known. Supporters believe that NFP might be able to profit from the controversy over other methods and gain ground among contraceptive users as a safe method of fertility control.

Spieler, the AID representative, noted that the NFP field faces a number of research challenges if its effectiveness is to be maximized and if use of the method is to increase. These developments will only happen, he said, if progress is measured by the same scientific yardstick that is applied to the other methods of family planning. Spieler also pointed out that there are no guarantees that the government's funding for NFP research and service programs will continue at its current high levels.

The climate for NFP appears to be quite favorable at the moment. However, if the U.S. population assistance budget should be reduced drastically, for example, or if an ad-

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ministration less friendly to some of the program's major political supporters is elected in 1988, the pressure to broaden the appeal of NFP could diminish, along with the financial support.

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12. E. Lapierre-Adamcyk, "Fertility Regulation in Canada: Analysis of Dominant Trends in Quebec," paper presented at the meeting of the IFFLP, June 30, 1986.

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21. J. Kippley, "Integration of Abstinence in Natural Family Planning: America," paper presented at the meeting of the IFFLP, July 1, 1986.

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Books in Review

Does Economic Theory Explain Fertility?

Fertility in Developing Countries: An Economic Perspective on Research And Policy Issues
ed. by Ghazi M. Farooq and George B. Simmons, St. Martin's, New York, 1985, $37.50, 556 pp.

Reviewed by Rodolfo A. Bulatao

This compilation of articles and studies on the economics of fertility determination commemorates a decade of work on population and employment by the International Labour Organization (ILO), in which enterprise the determinants of fertility were treated as one of the "critical issues." Whatever the other results of that enterprise, this book suffers from a lack of coherence and any clear goal.

The volume is divided into three sections: Part I, with four chapters, provides an overview of theoretical issues and empirical findings; the six chapters in Part II focus on methodology, with an emphasis on econometric issues; and Part III includes six "case studies," essentially assorted analyses of data for a number of developing countries. The three sections are mismatched—three faces behind which lies no consistent personality. The overview gives short shrift to the case studies, the case studies ignore the methodological injunctions, and the papers on methodology exist in a world of their own. Cross-references are mostly cosmetic afterthoughts. Whether out of wisdom or out of frustration, the editors do not supply a summary chapter.

The message of the introductory chapter of the overview is that fertility research by economists is relevant to what is happening in the world. The following chapter, which deals with economic theories of fertility, is more substantive. George Simmons begins, apologetically, with Malthus and Marx, noting that "Malthus' theory of fertility is the weakest link in his grand design" [p. 25] and that "Marx did not develop a very complete theory of fertility" [p. 27]. Forging on through demographic transition theory, he arrives at microeconomists and their microvariations and pushes beyond to "new" approaches such as neo-Marxism and game theory. Given the terminus, it is not surprising that Simmons concludes with another apology: "The current state of economic theories suggests . . . a very early stage of development" [p. 55].

Just how early is clearly demonstrated by the following chapter, also by Simmons, summarizing empirical research. The fact that Simmons divides theories of fertility and research on fertility determinants into two separate chapters suggests that existing theory does not account for verified empirical regularities, and that empirical work has not been controlled predominantly by theoretical concerns. (It may also suggest humility on the author's part about the difficulties of bringing theory and data together.) His workmanlike summary of empirical research is inevitably less comprehensive than summaries that are not discipline-bound, but it still manages to touch many of the right bases. One jarring note is the timidity with which Simmons approaches the effects of education on fertility: "The net result of these theoretical and empirical studies is to suggest caution. Certainly, the education of women may have important implications for fertility, and in some settings it may be a central variable for policy-makers" [p. 81]. By contrast, the author deals more positively with the considerably more questionable effect of income distribution on fertility: "Most studies . . . indicate the existence of a modest negative association" [p. 87]. This conclusion is not supported by the relevant case study, however.

The concluding chapter of Part I is the editors' attempt to emphasize policy considerations. Their main idea is that researchers should go beyond establishing the fertility effect of variables such as female employment to exploring "the programmatic initiatives that will need to be undertaken to change the pattern of women's employment" [p. 116]—translation: how to get women more and better jobs. A couple of the chapters in Part II of the book, especially the one on simulation, also point to methodologies that have policy implications, but the use of the word "policy" in the book's subtitle is more hopeful than descriptive.

The most interesting papers on methodology are by Mark Browning, on pooling cross-section and time-series data, and by Lee Edlefsen and Samuel Lieberman, on aggregate data. Both should be heavy going for those who are not into multivariate analysis. Browning discusses how the choice of estimation technique depends upon the completeness of one's theory. Edlefsen and Lieberman argue that aggregate coefficients will be equal to individual coefficients under specified conditions.

The other papers in the methodology section are an uneven assortment. Boone Turchi discusses recursive, interdependent and Joreskog's latent variable models in an abstract, unenlightening manner. Gerry Rodgers and René Wéry briefly comment on simulation techniques and then run instructive simulations with a Bachue model, showing the effects of six alternative fertility functions on Philippine income, employment and demography. With five tables full of statistics, their paper could well have found a place in the empirical section. The point of Ghazi Farooq's piece on different measures of fertility is elusive, particularly since it fails to cover the only somewhat unusual measure used in the case studies. Finally, Christine Oppong devotes one of the longest chapters in the book to anthropological contributions to economic theory. Why is anthropology represented while disciplines like sociology, psychology and public health are excluded? According to Oppong, "Anthropologists feel

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that the main demographic patterns of any society rest on a combination of social, cultural and psychological factors, and that these can be uncovered only through the intensive methods of the field anthropologist" [p. 242]. The editors seem to endorse this anthropological monopoly.

Part III, the empirical section, is composed mainly of different researchers' regression analyses of the determinants of fertility in a number of developing countries. The editors did not select studies with similar or complementary foci, approaches and specifications, nor do they offer a comparison of results. Each paper stands on its own, and references to other analyses are rare. That is presumably why the entries are called "case studies." All the studies have been influenced to some degree by economic ideas, but none of them develop or test any formal model, despite the editors' assertion that a chief strength of econometrics is its use of "deductive reasoning" [p. 106]. The first few empirical papers, in particular, do not succeed in communicating any sense of social dynamics and instead provide forgettable acronyms and tables of regression coefficients punctuated by asterisks that, in the context, cannot excite.

The book picks up a little toward the end. Samuel Lieberman and Richard Monteverde discuss the relationship between fertility, agricultural crops and migration flows in Turkey. They suggest that high outmigration and high fertility reinforce each other. C. R. Winegarden's study provides new cross-national regressions for the link between income distribution and fertility. His model allows fertility, income distribution and mortality all to be endogenous, but the sample of countries remains small.

The collection highlights three problems inherent in the economic approach to fertility determinants. The first is the divergence between theory and empirical implementation. Sometimes faith is required to accept the validity of proxy measures, and sometimes variables that seem to predict fertility are thrown into analyses even when there is no theoretical justification for inclusion. Turchi recommends the development of theory relating measures to underlying theoretical constructs, but none of the other authors heed his injunction.

A second problem with the economic approach is its focus on people's intentions and the outcomes of their behavior, rather than on the behavior itself. A couple of the studies consider family-size preferences, and all of them look at the number of children, but the latter variable is the result of a complex series of behaviors and biological processes. Not one paper looks at contraception or abortion. It is as if one tried to understand individual wealth by focusing on adolescent dreams of getting rich, on the one hand, and current net worth, on the other, without paying any attention to job history, savings and investment behavior, tax-avoidance strategies, and so on. Although some papers do recognize the importance of marriage and breastfeeding, references to contraception are as rare as they are on American television.

The third problem is that economic investigation of fertility determinants remains intertwined with work in other disciplines. The overview spends time on several approaches that are not strictly economic. In the methodological section, we are told that economists often borrow from other disciplines: A typical research problem is what to do if, "after reading the large sociological literature on fertility in Third World countries, the analyst proposes to add some new variables to his fertility model" [p. 197]. And noneconomic work provides the starting point for some contributions, notably that of Lieberman and Monteverde.

At least part of the time, the editors themselves appear to be deeply skeptical of current economic work on fertility, claiming that a common feeling among researchers is that "present theories do not capture, even in a heuristic manner, the most important elements in the process which determines fertility at either the household or the societal level" [p. 49]. Perhaps as a result, the volume as a whole does not do justice to the ingenuity of the economic approach. It is best to approach this volume as one would a garage sale: Somewhere in the jumble there may be ideas worth recycling, but one would be ill-advised to refurnish one's intellectual house from this store.

The Forest or the Trees?

Disease and Fertility

by Joseph A. McFalls, Jr., and Marguerite Harvey McFalls, Academic Press, Orlando, Fla., 1984, $69.50, 593 pp.

Reviewed by Odile Frank

Compared with the usual run of demographic literature, this fact-filled volume is highly readable. Unfortunately, lack of scholarship clearly limits its usefulness as a contribution to the study of the relationship between epidemiology and demography, an area of research that is already often relegated to stepchild status by each of its natural parents.

In outline, the book is straightforward. It is divided into six sections: an introduction that lays out the issues guiding the work, a very lengthy section on a number of non-sexually transmitted diseases (tuberculosis, malaria, filariasis, schistosomiasis, trypanosomiases); a somewhat shorter section on sexually transmitted diseases (gonorrhea, syphilis, herpes, mycoplasmas and chlamydia); a section discussing the circumstantial determinants of pelvic inflammatory disease (induced abortion, childbirth, IUDs and circumcision); a two-chapter overview that provides a niche for the senior author's work on U.S. black fertility; and a final section of appendices on the topics of diabetes, sickle-cell hemoglobin and, rather surprisingly, smallpox.

At first blush, these contents appear to be comprehensive, but their all-inclusiveness betrays a lack of perspective and selectivity. The work is further marred by its unscientific treatment of the very large amount of material used to support the authors' major arguments. These shortcomings, which are both substantive and stylistic in nature, are of four types: lack of focus, interpretive inconsistencies, unsubstantiated and demographically irrelevant material and unscientific language.

The authors state that their book's "first major objective is to identify diseases that can cause population subfecundity" [p. xiii]. This focus is intended to overcome two important deficiencies of prior research: ignorance of those diseases that can effectively alter population fecundity, and lack of quantification of the effects of disease on fecundity. Unfortunately, the authors do little to redress these deficiencies. Indeed, armed

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with the syllogism "disease is a multipotent cause of individual subfecundity [and] it is highly prevalent in all societies; [it] is thus an extremely important cause of population subfecundity" [p. xiii], the authors exclude no disease from consideration, even when they find only weak support for its effect. Their important objective is thereby systematically left aside. A notable example of this problem is the discussion of the ultimate effects of genital tuberculosis (TB), a disease that the senior author consistently offers as a major contributor to population infecundity, in competition with sexually transmitted diseases. Surprised that "a comprehensive study of genital TB and its impact on population fecundity is lacking" [p. 81], the authors ignore the relevance of studies that *have* been conducted in which the proportion of genital TB cases among initial pulmonary TB cases is on the order of 5–12 percent. Since annual infection rates of pulmonary TB are less than two percent, genital TB can explain only a small fraction of prevailing infecundity. Given these data, the authors fail to eliminate TB as a major contributor to infecundity, arguing instead that the hypothesis of its effect should be retained because the data are so far inconclusive.

Further evidence of the clouded focus of the work is that having established that the three components of fecundity are coital ability, conceptive ability and fetal loss, the authors then utilize all three as criteria for the fecundity impact of disease, without regard to their relative import. For example, the influence of disease on male coital inability becomes insignificant in societies where a high level of remarriage for reasons of poor sexual performance is tolerated. Similarly, the authors fail to consider conceptive failure separately from causes of pregnancy loss. The causes of conceptive failure are frequently more permanent than those of fetal loss and affect a larger number of (potential) pregnancies. By contrast, a great many immediate causes of pregnancy loss must also account for the 20 percent normal (and universal) incidence of idiopathic spontaneous abortion, which merely extends the birth interval by 2–3 months, on average.

Lastly, conceptual haziness further contributes to the lack of focus. Thus, while the major theme is supposed to be disease and fecundity (the title of the book notwithstanding), in fact, the authors' arguments frequently rely on the effects of disease on infant mortality, on general mortality and, most frequently, on infecundability. Indeed, when disease influences fertility by affecting fecundability (the probability of conception), fecundity (the physiological ability to conceive) is not affected. But here, conceptual inconsistencies and sloppiness become evident. The authors state in a footnote, "It is worth stressing that coital frequency is not a determinant of subfecundity" [p. 44]. However, to provide support for the effect of disease on fecundity, they later mention that pulmonary TB may cause coital inability because "advanced cases of pulmonary TB may be associated with such shortness of breath on exertion that coitus becomes impossible" [p. 78]. Here, coital inability is viewed no longer as an issue of fecundity, but as a behavioral phenomenon that is properly a factor of coital frequency and fecundability.

The authors' lack of focus and conceptual clarity create a paradigmatic case of not seeing the forest for the trees. A review of all possible links between disease and fecundity (including, but not limited to, the causal effects mediated in either direction by fecundability and other external factors) is appropriate for individual clinical investigation, but not as a means to answer questions of demographic relevance. The authors themselves seem somewhat overwhelmed by the confusion they have created. On the one hand, they berate population students for their morbid single-mindedness, claiming that "identification of diseases that cause subfecundity will also eliminate the . . . preoccupation of most population students with venereal disease" [p. 66]. On the other hand, they themselves remain sensitive to the fundamental good sense of that preoccupation: "There is no doubt that the venereal diseases are the most important subfecundity-producing diseases. In fact, gonorrhea may be the single most powerful cause of population subfecundity" [p. 64]. They also accede to the logical basis for such propositions: "Some type of mechanism associated with sexual activity is always sought in [pelvic inflammatory disease] cases because pelvic infections are rarely seen in premenstrual and postmenopausal women and women who are not sexually active" [p. 289].

On several occasions, the authors use the same information to support contradictory arguments. For example, they argue that malnutrition is a "powerful cause of subfecundity" [p. 13], after providing contrasting examples of the influence of nutrition on the fecundity of Hutterites, Zairians and the !Kung. We learn later, however, that "the balance of research indicates that the impact of malnutrition on individual fecundity is not nearly so great as previously suspected. Thus, its stature as a major cause of population subfecundity has appreciably eroded" [p. 60]. And yet again, a section in the concluding chapter begins, "Nutritional status is also an important factor in the disease-subfecundity relationship" [p. 521].

Similarly, the authors' misuse of data to support different arguments at different times is evident in their handling of amniocentesis. At one point, they discuss it as a technique that can decrease fetal loss and enhance fertility through detection of potentially life-threatening disorders [p. 33]; at another point, amniocentesis is seen as a cause of voluntary abortion [p. 34]; and, finally, it is discussed as a contributor to subfecundity because of the small incidence of involuntary abortion the procedure provokes [p. 35]. Moreover, using the authors' own criteria, the overall effects of amniocentesis are negligible and therefore omissible.

The authors tend to sprinkle their text with unsubstantiated and demographically irrelevant material that muddies the water, even if their anecdotes make good reading. It is, for example, unsubstantiated and irrelevant that " . . . there was an unconfirmed report from India of the birth of a child who was frozen prior to implantation" [p. 35], and it is certainly demographically irrelevant (albeit interesting) to know that a rod implant to mimic a natural erection costs $3,500, or that an electronic microchip to indicate ovulation—called a sexometer—cost $240 in 1982. In addition, their work contains a number of examples of the indiscriminate abuse of statistics. A 500 percent increase in leprosy cases in the United States between 1960 and 1980 (to 4,200 cases!) is used to illustrate the potential for immigration to be associated with an increase in subfecundity-producing diseases [p. 57]. To show how disease can depress fertility, the authors state that in the 1957 Asian influenza epidemic "pregnant women made up almost 50 percent of childbearing-age women who died . . . in New York City and Minnesota." [p. 61].

At times, the authors use language that is inappropriate for a scientific work. Such language may be used to mask incomplete quantification or uncertain orders of magnitude. They refer, for example, to the "phenomenal" rise in infant mortality in the Soviet Union, the fact that coital inability is "particularly rife" in the United States and the "dramatic" increase in sexually transmitted diseases in developed countries.

Sadly, the authors fail to select, relate or rationalize the knowledge in this field in a scholarly manner. Even in the overview, they make no pretense at assigning true weight to the great variety of diseases covered, but simply list the gamut of disease-subfecundity links without regard to demographic meaningfulness. In sum, this volume offers little guidance in identifying those diseases that are so sensitively and specifically disruptive of human fecundity that they make a demographic difference.

Family Planning

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ORAL CONTRACEPTIVE (O.C.) AGENTS

Indications Prevention of pregnancy. *DOSE-RELATED RISK OF THROMBOEMBOLISM* Because studies have shown a positive association between OC estrogen dose and risk of thromboembolism, it is prudent to minimize estrogen exposure. Prescribe an OC with the least amount of estrogen compatible with an acceptable pregnancy rate and patient acceptance. Start new users on OCs containing 0.05 mg or less of estrogen.

Contraindications 1. Known or suspected pregnancy (see Warning #5). 2. Thrombophlebitis or thromboembolic disorders. 3. Past history of deep vein thrombophlebitis or thromboembolic disorders. 4. Undiagnosed abnormal genital bleeding. 5. OCs should not be used by women who have or have had any of the following: a. cerebral vascular or coronary artery disease, including myocardial infarction; b. known or suspected carcinoma of the breast; c. known or suspected estrogen dependent neoplasia; d. benign or malignant liver tumor that developed during use of OCs or other estrogen containing products.

> **WARNINGS: Cigarette smoking increases the risk of serious cardiovascular side effects from OC use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use OCs should be strongly advised not to smoke.**
>
> The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective, case-control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS. Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI). Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S., so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE. Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK. Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES. A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34–5/100,000; ages 35-44–33/100,000; ages 45-49–140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34–1/6700 for nonsmokers and 1/2000 for smokers; ages 45 and over–1/2500 for nonsmokers and 1/500 for smokers. Risk appeared to increase with parity but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth, except for OCs in women over 40 who smoke. (Rates given for pill only/smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS–RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40+
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C D	C
Nonsmokers (other predisposing conditions)	C	C B	B A

A–Use associated with very high risk
B–Use associated with high risk
C–Use associated with moderate risk
D–Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions.* Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma.* Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case-control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is nevertheless essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors.* Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen." The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* Use of female sex hormones–estrogenic and progestational agents–during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1/1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case-control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1/1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective, and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease.* Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects.* Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure.* An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences, or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache.* Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility.* There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding.* OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast-fed child have not been determined. If feasible, defer OC use until the infant has been weaned. **Precautions** *GENERAL* 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. DRUG INTERACTIONS. OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS* See Warnings. *PREGNANCY* Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS* See Warnings. **Adverse Reactions** An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hermorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package Insert)

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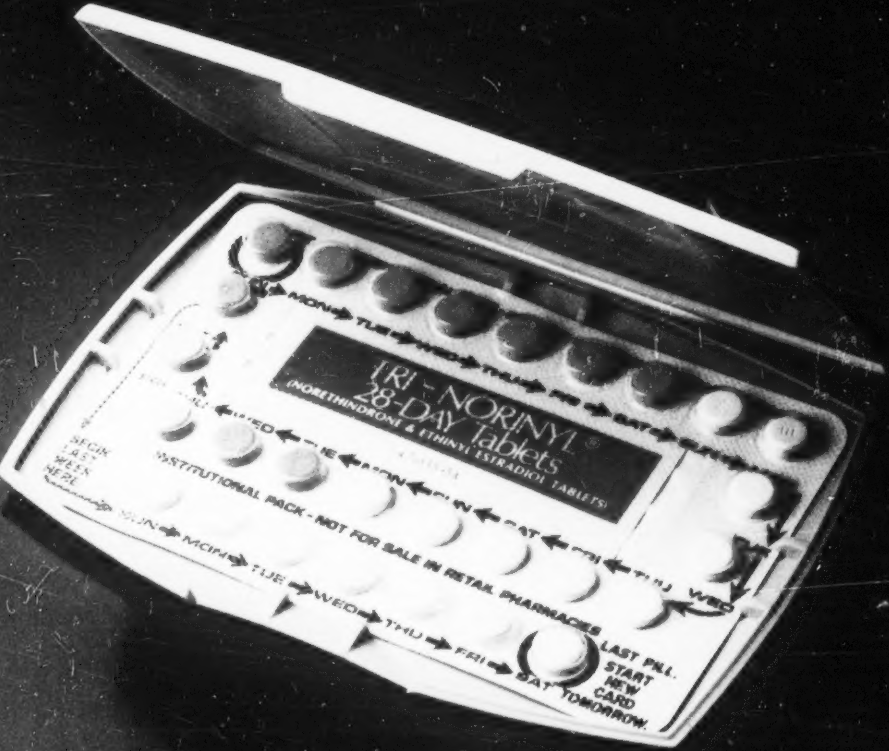
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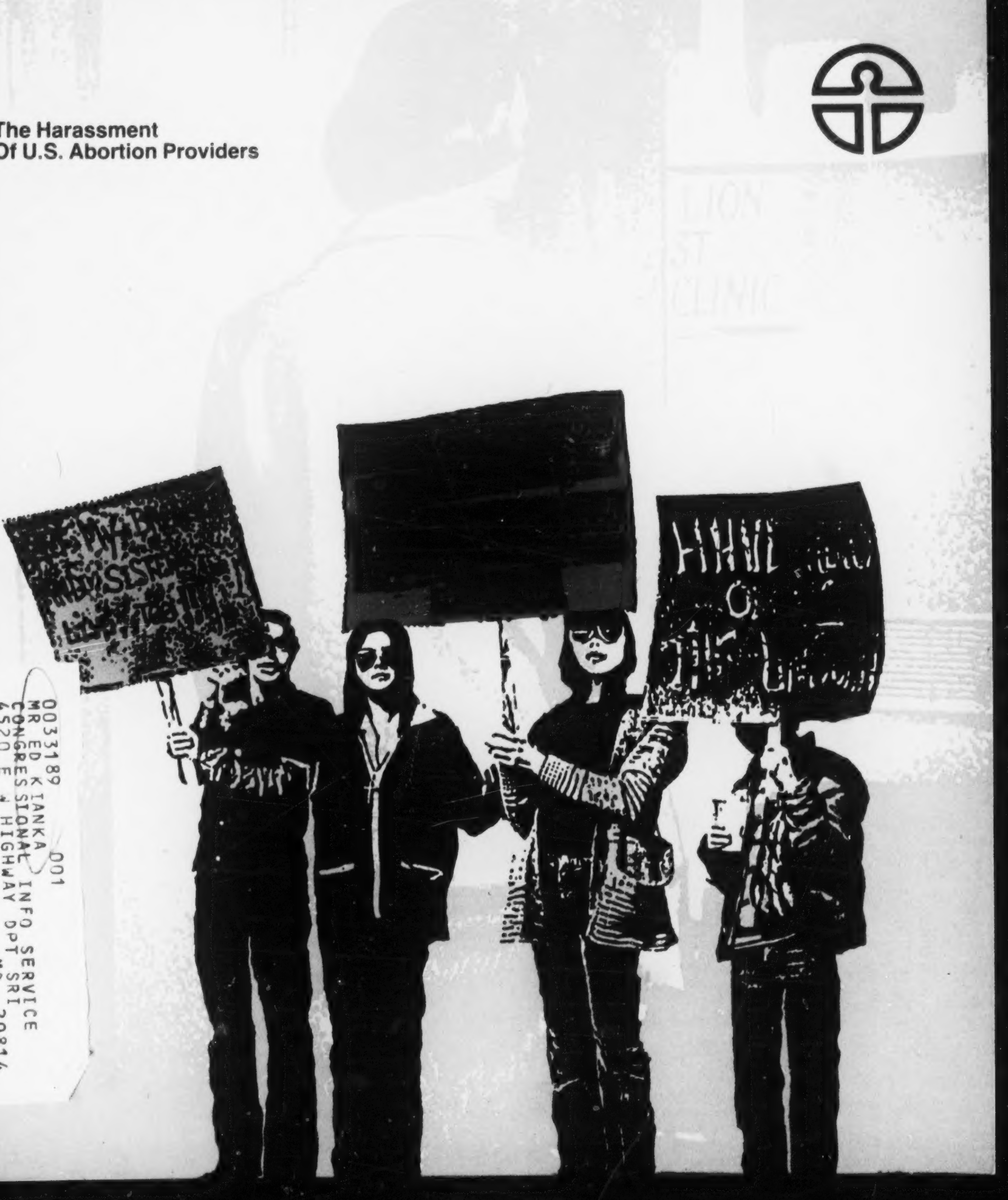
Family Planning

Perspectives

Volume 19, Number 1, January/February 1987

The Harassment Of U.S. Abortion Providers



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LOESTRIN®
(norethindrone acetate and ethinyl estradiol tablets, USP) See section under **Special Notes on Administration** and **How Supplied.**
Before prescribing, please see full prescribing information. A Brief Summary follows:

DESCRIPTION

Loestrin Products are progestogen-estrogen combinations.

INDICATIONS AND USAGE

Loestrin Products are indicated for the prevention of pregnancy in women who elect to use oral contraceptives.

In clinical trials with Loestrin 1/20 involving 15,899 therapy cycles, there was a pregnancy rate of 0.75 per 100 woman-years; in clinical trials with Loestrin 1.5/30 involving 17,139 cycles, there was a pregnancy rate of 0.49 per 100 woman-years.

Dose-related risk of thromboembolism from oral contraceptives: Studies have shown a positive association between the dose of estrogens in oral contraceptives and the risk of thromboembolism. It is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The oral contraceptive prescribed for any given patient should be that product which contains the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance.

CONTRAINDICATIONS

1. Thrombophlebitis or thromboembolic disorders.
2. A past history of deep-vein thrombophlebitis or thromboembolic disorders.
3. Cerebral vascular or coronary artery disease.
4. Known or suspected carcinoma of the breast.
5. Known or suspected estrogen-dependent neoplasia.
6. Undiagnosed abnormal genital bleeding.
7. Known or suspected pregnancy (See No. 5 under WARNINGS).
8. Benign or malignant liver tumor which developed during the use of oral contraceptives or other estrogen-containing products.

WARNINGS

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with the use of oral contraceptives is well-established. Studies have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic.

Cerebrovascular disorders: In a collaborative study in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than nonusers, and the risk of thrombotic stroke was 4.0 to 9.5 times greater.

Myocardial infarction: An increased risk of myocardial infarction associated with oral contraceptives has been reported confirming a previously suspected association. These studies found that the greater the number of underlying risk factors (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) for coronary artery disease, the higher the risk of developing myocardial infarction, regardless of whether the patient was an oral contraceptive user or not. Oral contraceptives, however, were found to be a clear additional risk factor.

It has been estimated that users who do not smoke (smoking is considered a major predisposing condition to myocardial infarction) are about twice as likely to have a fatal myocardial infarction as nonusers who do not smoke. Oral contraceptive users who are smokers have about a fivefold increased risk of fatal infarction compared to users who do not smoke, but about a tenfold to twelvefold increased risk compared to nonusers who do not smoke. The amount of smoking is also an important factor.

Risk of dose: In an analysis of data, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in oral contraceptives; however, the quantity of estrogen may not be the sole factor involved.

Persistence of Risk: In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of oral contraceptive use for cerebrovascular disease and 9 years for myocardial infarction. In addition, a prospective study suggested the persistence of risk for subarachnoid hemorrhage.

Estimate of excess mortality from circulatory diseases: The risk of diseases of the circulatory system is concentrated in older women, in those with a long duration of use, and in cigarette smokers.

A study of available data from a variety of sources concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of oral contraceptives in women over 40 who smoke.

The risk of thromboembolic and thrombotic diseases associated with oral contraceptives increases with age after approximately age 30 and, for myocardial infarction, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia, and especially by cigarette smoking.

The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders. Should any occur or be suspected, the drug should be discontinued immediately.

A fourfold to sixfold increased risk of postsurgery thromboembolic complications has been reported in users. If feasible, oral contraceptives should be discontinued at least four weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization.

2. *Ocular lesions.* Neuro-ocular lesions, such as optic neuritis or retinal thrombosis, have been associated with the use of oral contraceptives. Discontinue the oral contraceptive if there is unexplained sudden or gradual, partial, or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions.

3. *Carcinoma.* Long-term continuous administration of estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver.

In humans, an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women has been reported. However, there is no evidence suggesting increased risk of endometrial cancer in users of conventional combination or progestogen-only oral contraceptives.

Studies found no evidence of increase in breast cancer in women taking oral contraceptives; however, an excess risk in users with documented benign breast disease was reported.

There is no confirmed evidence of an increased risk of cancer associated with oral contraceptives. Close clinical surveillance of users is, nevertheless, essential. In cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer, or who have breast nodules, fibrocystic disease, or abnormal mammograms, should be monitored with particular care.

4. *Hepatic Tumors.* Benign hepatic adenomas have been found to be associated with oral contraceptives. Because hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage, they should be considered in women presenting abdominal pain and tenderness, abdominal mass, or shock.

A few cases of hepatocellular carcinoma have been reported in women taking oral contraceptives. The relationship of these drugs to this type of malignancy is not known at this time.

5. *Usage in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* During early pregnancy, female sex hormones may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. Although there is no evidence at the present time that oral contraceptives further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use oral contraceptives instead of other methods of contraception.

An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of oral contraceptives in pregnancy.

In the past female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective for these uses.

There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing oral contraceptives.

Pregnancy should be ruled out before continuing an oral contraceptive in any patient who has missed two consecutive menstrual periods. If the patient has not adhered to the schedule, the possibility of pregnancy should be considered at the time of the first missed period, and oral contraceptives should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed.

Women who discontinue oral contraceptives with the intent of becoming pregnant should use an alternate form of contraception for a period of time before attempting to conceive.

Administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy.

6. *Gallbladder Disease.* Studies report an increased risk of surgically confirmed gallbladder disease in users of oral contraceptives.

7. *Carbohydrate and Lipid Metabolic Effects.* Because decreased glucose tolerance has been observed in a significant percentage of patients, prediabetic and diabetic patients should be carefully observed while receiving oral contraceptives.

An increase in triglycerides and total phospholipids has been observed.

8. *Elevated Blood Pressure.* An increase in blood pressure has been reported in patients receiving oral contraceptives. The prevalence in users increases with longer exposure. Age is also strongly correlated with development of hypertension. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure.

9. *Headache.* Onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of oral contraceptives.

10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and amenorrhea are frequent reasons for patients discontinuing oral contraceptives. In breakthrough bleeding, nonfunctional causes should be borne in mind. In undiagnosed abnormal bleeding from the vagina adequate diagnostic measures are indicated to rule out pregnancy or malignancy.

Women with a past history of oligomenorrhea or secondary amenorrhea, or young women without regular cycles should be advised that they may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of oral contraceptives.

11. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures.

12. *Breast Feeding.* Oral contraceptives may interfere with lactation. Furthermore, a small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs.

PRECAUTIONS

1. A complete medical and family history should be taken prior to the initiation of oral contraceptives. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen, and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, oral contraceptives should not be prescribed for longer than one year without another examination.
2. Preexisting uterine leiomyomata may increase in size.
3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree.
4. Oral contraceptives may cause fluid retention and should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated.
5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice. If jaundice develops, the medication should be discontinued.
6. Steroid hormones may be poorly metabolized and should be administered with caution in patients with impaired liver function.
7. Users may have disturbances in normal tryptophan metabolism, which may result in a relative pyridoxine deficiency.
8. Serum folate levels may be depressed.
9. The pathologist should be advised of oral contraceptive therapy when relevant specimens are submitted.
10. Certain endocrine and liver function tests and blood components may be affected:

(a) Increased sulfobromophthalein retention. (b) Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. (c) Increased thyroid-binding globulin (TBG) leading to increased circulating total thyroid hormone. (d) Decreased pregnanediol excretion. (e) Reduced response to metyrapone test.

Drug Interactions: Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with oral contraceptives: Thrombophlebitis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gallbladder disease, benign hepatomas, congenital anomalies.

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed: Mesenteric thrombosis, neuro-ocular lesions, eg, retinal thrombosis and optic neuritis.

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: gastrointestinal symptoms; breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; amenorrhea during and after treatment; temporary infertility after discontinuance of treatment; edema; chloasma or melasma; breast changes; change in weight; change in cervical erosion and cervical secretion; possible diminution in lactation when given immediately postpartum; cholestatic jaundice; migraine; increase in size of uterine leiomyomata; rash (allergic); mental depression; reduced tolerance to carbohydrates; vaginal candidiasis; change in corneal curvature; intolerance to contact lenses.

The following adverse reactions have been reported and the association has been neither confirmed nor refuted: Premenstrual-like syndrome; cataracts; changes in libido; chorea; changes in appetite; cystitis-like syndrome; headache; nervousness; dizziness; hirsutism; loss of scalp hair; erythema multiforme; erythema nodosum; hemorrhagic eruption; vaginitis; porphyria.

Special Notes on Administration

Loestrin **21**—Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after discontinuing medication.

Loestrin **Fe**—Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after the brown ferrous fumarate tablets have been started.

Because of the relatively low estrogenic content, Loestrin (norethindrone acetate and ethinyl estradiol tablets, USP) is not a good cyclic regulator. There are patients whose inherent hormone balance will require larger amounts of estrogen than that contained in Loestrin to achieve cyclic regularity. These patients experience altered bleeding patterns, which do not conform to treatment schedules. It is important that patients adhere to the dosage schedule regardless of when bleeding occurs.

The physician should be alert to the fact that the irregular bleeding patterns could mask bleeding from organic cause, and appropriate diagnostic measures should be taken if the bleeding persists or continues after changing to a higher estrogen-content product.

After several months, bleeding may be reduced to a virtual absence; reduced flow may be a result of medication and not indicative of pregnancy.

HOW SUPPLIED

Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets; each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP, in packages of five compacts and packages of five refills.

Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP, in packages of five compacts and packages of five refills.

0913G151

Caution—Federal law prohibits dispensing without prescription.

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Division of Warner-Lambert Company
Morris Plains, New Jersey 07950

Family Planning

Perspectives

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In This Issue

Abortion Patients And Abortion Providers

Almost two years ago, we published an article describing the major characteristics of U.S. women obtaining abortions in 1980 and 1981.* The lead article by Stanley K. Henshaw in this current issue (page 5) updates those findings and presents a portrait of the approximately one and one-half million U.S. women who terminated their pregnancies by abortion in 1982 and 1983. Overall, there has been very little change in the national profile: Most abortions in the United States were obtained by young women, unmarried women and white women, and the vast majority (over 90 percent in both 1982 and 1983) of the procedures were carried out in the first trimester of pregnancy. As in preceding years, all but about three percent of abortions were performed by instrumental evacuation (predominantly by vacuum aspiration).

About three percent of all women aged 15–44 obtained abortions in 1982 and in 1983 (a rate almost identical to that found in the two preceding years); and the abortion ratio (the percentage of pregnancies terminated by abortion) has remained virtually unchanged)—at about 30 percent—since 1980. Moreover, although differentials in the likelihood that a woman will terminate a pregnancy by abortion remain wide, the patterns by age, race and marital status appear to be largely unvarying.

The author ends his analysis with the somewhat pessimistic conclusion that "unless policy changes are made or new contraceptive technologies are introduced, it appears unlikely that major progress will be made in improving Americans' control over their fertility. . . . " The only conceivable change in circumstances that may render that prediction invalid is a dramatic modification of patterns of sexual activity, especially among the very young and among single women, as a result of the AIDS scare that is sweeping the world. Unfortunately, no new data on exposure to pregnancy will be available until after 1987, when the next round of the U.S. National Survey of Family Growth is scheduled to be fielded. Until that time, we can only speculate on the changes that may be occurring in the areas of sexual initiation, coital frequency, number of partners and contraceptive practice among America's young and adult populations.

While the overall profile of abortion patients has remained very much unchanged in recent years, the setting in which many women obtain abortion services *has* altered in one very important respect: More and more hospital providers and nonhospital facilities have experienced harassment (characterized by varying degrees of violence) at the hands of organized groups opposed to the continuing availability of legal abortion in this country. The article by Jacqueline Darroch Forrest and Stanley K. Henshaw (page 9) presents the results of a 1986 survey of abortion providers that included a series of questions on the kinds and levels of harassment the facilities had been subjected to in recent years. The respondents' answers reveal that 25 percent of hospital providers, and 88 percent of large nonhospital facilities, had experienced at least one form of organized pressure designed to force them to curtail their abortion services. Among hospital providers, antiabortion activity mostly assumed the form of pressure exerted from outside the hospital to force the restriction or elimination of services. Among large clinics, the major type of harassment experienced was picketing, but only six percent of clinics reported that this was the only activity directed against them. Some of the other activities designed to add to the apprehension of clinic workers and patients were bomb threats (received by 48 percent of large nonhospital providers), loud demonstrations (42 percent), invasion of the premises (29 percent), vandalism (28 percent) and even death threats (19 percent).

It is not possible to estimate from the survey findings the proportion of U.S. women obtaining abortions who were affected by harassment of the facility they were attending. Levels of antiabortion activity obviously vary with the size of the facility, the time of year and day and the zealousness of the antiabortion groups in the area. Nevertheless, it is probably true to say that as a result of clinic and hospital harassment, a medical procedure not easy to undergo at the best of times has been made even more stressful for many thousands of women exercising their legal right to terminate an unintended pregnancy. In addition, the perception that an abortion clinic is a potentially dangerous or controversial place to go to or work in has undoubtedly deterred some women from obtaining abortions, and has made the recruitment of doctors, nurses, counselors and clerical staff to work in such facilities increasingly difficult for administrators. As the survey also documents, many administrators now face such problems as having to upgrade their security and obtain increased legal representation.

A New Section

We have decided to add a new section, called "Documents," to *Family Planning Perspectives*. For some years now, we have been aware of the existence of a category of reporting that has not fallen neatly into any of the major classifications we have established in the magazine (articles, research notes, comments, book reviews and the "Digest" section). By and large, we anticipate that reports falling into this new category will be detailed excerpts from long or very technical documents of a legal, investigatory or scientific nature that cannot be summarized (as we might normally do) without a very real loss of their original impact. We think that this might well have been the case if we had attempted to write a summary of the first document to be excerpted in our new section. It is a legal opinion written by U.S. District Court Judge Donald A. Alsop (see page 36), which finds unconstitutional Minnesota's 1981 legislation requiring parental notification, with a judicial bypass option, for minors who seek abortions. The opinion is particularly interesting because it cites at length much of the testimony presented at trial by judges who have handled the bulk of the bypass petitions presented in Minnesota since the law was enacted. The opinion also includes evidence given by doctors, clinic counselors, lawyers and psychologists involved in helping to guide pregnant minors through the judicial bypass maze. Almost without exception, the judges and other professionals conclude that the process is more harmful than helpful to families and to the young women. One judge states that he cannot "perceive any useful public purpose to what he is doing in these cases," and he characterizes the required court appearance as a "nerve-wracking experience" for most minors.

The "Documents" section will not necessarily appear in every issue of *Perspectives*, but we would very much like to hear from readers whether they find it a worthwhile addition to the magazine.

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*See: S. K. Henshaw et al., "A Portrait of American Women Who Obtain Abortions," *Family Planning Perspectives*, 17:90, 1985.

Characteristics of U.S. Women Having Abortions, 1982–1983

By Stanley K. Henshaw

Summary

In 1982 and 1983, as in previous years, the majority of abortions in the United States were obtained by young women (62 percent), white women (70 percent) and unmarried women (81 percent). Half of all abortions were performed eight or fewer weeks after the last menstrual period, and 91 percent, at 12 weeks or earlier. The proportion of abortions that were repeat procedures continued to rise, to 37 percent in 1982 and 39 percent in 1983.

The rate of abortion, 29 per 1,000, has remained essentially the same since 1981. Women aged 18–19 continue to have the highest abortion rate of any age-group (60 per 1,000). While most abortions are obtained by white women, the nonwhite abortion rate is more than twice that of whites.

Thirty percent of all pregnancies were terminated by abortion in 1983, the same proportion as in 1982 and 1981. The highest abortion ratios are found among unmarried women (63 percent), women 40 and older (51 percent), teenagers (42 percent) and nonwhites (40 percent). Teenage nonwhites and whites have about the same abortion ratios.

After rising during the 1970s, the adolescent pregnancy rate peaked around 1980–1981 and fell slightly in 1982–1983. The relative differentials between the pregnancy, birth and abortion rates of nonwhite and white teenagers narrowed somewhat between 1978 and 1981, but then widened slightly between 1981 and 1983.

Introduction

As part of its program of monitoring abortion services in the United States, The Alan Guttmacher Institute (AGI) periodically updates statistics on the demographic characteristics of women who have abortions, on the stages of gestation at which abortions are performed, and on the types of procedures used. The previous report of these statistics covered 1980–1981.[1]

The data presented below have been estimated by applying the percentage distributions of abortions according to various characteristics—as determined for each year by the Centers for Disease Control (CDC) abortion surveillance system—to the total number of abortions estimated by the AGI. The percentage distributions obtained from the CDC data have been adjusted to remove the influence of extraneous year-to-year changes in the data (for example, changes in the particular states included in the CDC compilation). The total numbers of abortions come from the AGI's periodic national surveys of all abortion providers identified in the United States. The figure for 1982 comes from the survey conducted in that year; the total for 1983 is based on a preliminary analysis of the 1984–1985 provider survey. A detailed description of the methodology used and the statistics computed for each year from 1973 to 1981 may be found in an earlier publication.[2]

In addition to demographic breakdowns, this article presents abortion rates and ratios, which permit examination of trends and subgroup differences in abortion utilization. The population estimates used in computing the abortion rates come from the Census Bureau; the numbers of births used in calculating the abortion ratios are from the National Center for Health Statistics (NCHS).

Findings

Table 1 (page 6) shows the number and percentage distribution of abortions performed in 1982 and 1983 by selected characteristics of the women. In both years, 1.57 million procedures were performed. This stability in the number is inconsistent with earlier estimates, based on other data, that had suggested a decline in the number of abortions after 1982.[3]

As in previous years, a majority of the women obtaining abortions in 1982–1923 were young: Some 62 percent were under age 25, while only 17 percent were 30 and older. About 27 percent of abortion patients were teenagers and one percent were younger than 15.

Nonwhite women accounted for 30 percent of abortions in 1982 and 31 percent in 1983. The proportion of abortions obtained by nonwhite women has risen slowly since 1979, when it was at a low of 29 percent, but it has yet to equal its earlier peak of 33 percent, reached in 1976. Unmarried women (those never-married, separated, divorced or widowed) accounted for 81 percent of abortion procedures in 1983, the same proportion as in 1982 and 1981. Prior to 1981, the proportion unmarried among women undergoing abortion increased by one percentage point per year, on average.

About 57 percent of abortion patients in 1982–1983 were nulliparous, suggesting that the procedure is generally used by women to delay childbearing. The proportion childless has been fairly constant at 57–58 percent since 1978. Eight percent of women having an abortion in 1983 had borne three or more children, unchanged from 1982.

Thirty-seven percent of abortion patients in 1982, and 39 percent in 1983, had previously had at least one abortion; 12 percent and 13 percent, respectively, had had two or more abortions. The proportion of patients with prior abortion experience has risen every year since 1974, when it was 15 percent. The increase reflects the growing number of women in the population who have had an abortion in the past and who therefore are at risk of having a second or higher order abortion.[4] If the abortion rate remains at about its present level, the increase in repeat abortions will probably continue for the next few years and then stabilize.

In 1982 and 1983, half of all procedures took place eight or fewer weeks after the last

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menstrual period (weeks LMP); the data suggest a slight decline since 1980, when the figure was 52 percent. The proportion performed after 12 weeks has remained at approximately nine percent since 1977, after having fallen sharply between 1973 and 1977 (from 15 percent). One percent of abortions in both 1982 and 1983 were performed past 20 weeks; however, the 1983 number (slightly more than 12,000) was down sharply from the number in 1982 (just over 14,000). Special tabulations for single weeks of gestation after 20 weeks have been made using NCHS data on more than 300,000 abortions in 13 states during 1983; the gestation measure used is the physician's postoperative estimate.* The tabulations indicate that of the abortion procedures performed after 20 weeks, 60 percent were done at 21 or 22 weeks' gestation; only about 100 abortions (or 0.01 percent of all procedures) were performed after 24 weeks.

The use of instrumental evacuation (vacuum aspiration, also called suction curettage; dilatation and curettage; and dilatation and evacuation) continued its long-term increase, reaching 97 percent in 1982 and 1983. Of instrumental evacuations during the first trimester, 95 percent were performed by vacuum aspiration (not shown). Medical induction, usually by intrauterine instillation of saline or prostaglandin, decreased correspondingly and now is used for only three percent of procedures. Abortion by hysterectomy or hysterotomy, performed in fewer than 0.1 percent of cases, has practically disappeared.

Table 2 shows patterns of abortion use, as measured by abortion rates and ratios among women of differing ages, racial groups and marital statuses. In 1983, the abortion rate was highest among women aged 18–19 and 20–24 (60 and 51 per 1,000 women, respectively), nonwhite women (56 per 1,000) and unmarried women (48 per 1,000). Of all the demographic subgroups shown, women 40 and older had the lowest rate (three per 1,000), followed by women aged 35–39 and those under 15 (10 and nine per 1,000, respectively).

The table also shows trends in abortion use between 1981 and 1983. The overall rate of abortion, 29 per 1,000, has stayed essentially the same since 1981, as have the rates for all the subgroups shown. In 1983, as in 1981, the rate was more than twice as high for nonwhites as for whites; and it was nearly five times as high for unmarried women as for married women.

The total abortion rate in both 1981 and 1983 was 790 (not shown), meaning that given present age-specific rates, a cohort of 1,000 women will have had 790 abortions by the end of their reproductive lives. This rate represents four abortions for every five women.

The abortion ratios presented in Table 2 (defined as the number of abortions per 100 live births plus abortions) are based on pregnancy outcomes adjusted to the age at which conception occurred rather than the age at outcome. The adjustment is performed by reducing the woman's age at abortion by three months, and her age at birth by nine

Table 1. Number and percentage distribution of legal abortions, by selected characteristics, United States, 1982 and 1983

Characteristic	No.		% distribution	
	1982	1983	1982	1983
Total	**1,573,920**	**1,575,000**	**100.0**	**100.0**
Age				
<15	14,590	16,350	0.9	1.0
15–19	418,740	411,330	26.6	26.1
15–17	(168,410)	(166,440)	(10.7)	(10.6)
18–19	(250,330)	(244,890)	(15.9)	(15.5)
20–24	551,680	548,130	35.0	34.8
25–29	326,380	328,280	20.7	20.8
30–34	168,020	171,560	10.7	10.9
35-39	73,250	78,090	4.7	5.0
≥40	21,260	21,260	1.4	1.4
Race				
White	1,095,260	1,084,360	69.6	68.8
Nonwhite	478,660	490,640	30.4	31.2
Marital status				
Married	300,260	294,670	19.1	18.7
Unmarried*	1,273,660	1,280,330	80.9	81.3
No. of live births				
0	902,780	890,000	57.3	56.5
1	321,000	329,460	20.4	20.9
2	222,760	227,600	14.1	14.4
3	81,720	82,890	5.2	5.3
≥4	45,660	45,050	3.0	2.9
No. of prior induced abortions				
0	994,470	964,170	63.2	61.2
1	397,890	406,030	25.3	25.8
2	122,480	138,350	7.8	8.8
≥3	59,080	66,450	3.7	4.2
Weeks LMP				
≤8	805,590	792,050	51.2	50.3
9–10	419,520	424,240	26.7	26.9
11–12	205,390	210,100	13.0	13.3
13–15	75,500	83,080	4.8	5.3
16–20	53,800	53,260	3.4	3.4
≥21	14,120	12,270	0.9	0.8
Method				
Instrumental evacuation†	1,518,950	1,524,720	96.5	96.8
Medical induction‡	53,900	49,370	3.4	3.1
Hysterotomy/hysterectomy	1,070	910	0.07	0.06

*In this and subsequent tables, refers to the never-married, separated, divorced or widowed.

†Suction and sharp curettage; includes dilatation and evacuation at 13 weeks' gestation and later.

‡Intrauterine instillation of saline, prostaglandin, urea and, in some cases, combination procedures.

Sources: **Number of abortions**—for 1982, AGI abortion provider survey; for 1983, estimated from the 1982 and preliminary 1984 numbers. **Distribution by characteristic**—based on CDC, "Abortion Statistics, U.S., 1982–1983," prerelease and supplemental prerelease to state agencies, Atlanta, 1986. Data have been adjusted to assure comparability between years. In addition, the distribution by gestation and method have been computed by apportioning to clinics and physicians' offices one-half of the difference between the number of abortions estimated by the AGI and the number reported to the CDC; these abortions are assumed to have been performed at 12 or fewer weeks LMP by instrumental evacuation.

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*For a discussion of the reasons for using physicians' estimates, see reference 1.

months.* In addition, births are lagged six months so that the calendar period of conception will be the same for births and abortions. The ratios may be interpreted as the percentage of pregnancies, excluding miscarriages and stillbirths, that end in abortion.

Overall, 30 percent of pregnancies were terminated by abortion in 1983 (the proportion is 26 percent when pregnancies estimated to have resulted in miscarriages and stillbirths are included in the denominator). The highest ratios—equaling 40 percent or more—were found among unmarried women (63 percent), women 40 and older (51 percent), teenagers (41–46 percent) and nonwhites (40 percent). The figure for nonwhites was almost 50 percent higher than that for whites, but this difference was smaller than the racial differential in abortion rates because nonwhite women had a higher birthrate as well as a higher abortion rate. The lowest ratio was seen among married women, who terminated only nine percent of their pregnancies. The abortion ratio stayed essentially the same between 1981 and 1983 among all women and among the demographic subgroups.

Table 3 illustrates the differences in abortion utilization by white and nonwhite women in 1983 according to their age and marital status. The abortion rate of nonwhite women was higher than that of whites at every age, but the differential was especially great among women younger than 15: Nonwhites in that category were more than five times as likely as whites to have an abortion. The abortion ratio was higher among nonwhites in all age-groups but one—the under-20 category. Here the ratio for nonwhites was lower, because in addition to having more abortions than whites, nonwhites also had many more births.

Nonwhite women usually use abortion to space their children or to terminate childbearing, whereas white women usually use it to postpone the onset of childbearing. Among all women obtaining abortions in 13 states in 1983, 61 percent of nonwhites had previously had a live birth, compared with 37 percent of whites. Among teenagers, the corresponding proportions were 23 percent and 10 percent.[5] (Data not shown.)

Among married women, as Table 3 shows, the rate of abortion use was nearly four times as high for nonwhites as for whites, but among the unmarried, the nonwhite rate was only about two-thirds higher than the white rate. In contrast, the proportion of pregnancies terminated by married nonwhites was nearly three times as high as it was for married whites, but in the case of unmarried women, nonwhites terminated a smaller proportion of pregnancies than did whites.

Table 2. Rate of abortions per 1,000 women aged 15–44, and ratio of abortions per 100 abortions plus live births,* by age, race and marital status, 1981–1983

Characteristic	Rate			Ratio		
	1981	1982	1983	1981	1982	1983
Total	**29.3**	**28.8**	**28.5**	**30.1**	**30.0**	**30.4**
Age						
<20	44.8†	44.4†	45.2†	41.3	41.2	42.3
<15	8.6‡	8.3‡	9.1‡	43.7	42.9	46.0
15–19	43.3	42.9	43.5	41.2	41.2	42.2
15–17	(30.1)	(30.1)	(30.8)	(42.2)	(42.0)	(43.2)
18–19	(61.8)	(60.0)	(60.4)	(40.3)	(40.5)	(41.4)
20–24	51.1	51.2	51.1	30.4	30.6	31.4
25–29	31.4	31.5	31.1	22.0	22.3	22.5
30–34	17.7	17.7	17.8	23.9	23.2	23.0
35–39	9.5	9.3	9.6	35.7	34.2	34.2
≥40	3.4§	3.3§	3.1§	51.3	51.4	51.4
Race						
White	24.3	23.8	23.3	27.4	27.1	27.4
Nonwhite	55.9	55.5	55.8	39.2	39.2	40.1
Marital status						
Married	10.5	10.5	10.3	9.2	9.5	9.3
Unmarried	50.1	48.6	48.1	64.5	63.4	63.2

*In this table and Tables 3–4, denominator is number of abortions plus live births six months later (to match times of conception for pregnancies ending in births and pregnancies ending in abortions), both adjusted to age of woman at time of conception.

†In this and subsequent tables, denominator is number of women aged 15–19.

‡In this and subsequent tables, denominator is number of 14-year-old females.

§In this and subsequent tables, denominator is number of women aged 40–44.

Note: Some of the ratios shown above for 1981 differ slightly from those previously published (in reference 1), because the current figures are based on corrected birth data.

Sources: **1981—see reference 1. 1982–1983—number of abortions:** see Table 1. **Number of women:** U.S. Bureau of the Census, "Estimates of the Population of the United States, by Age, Sex and Race: 1980 to 1984," *Current Population Reports (CPR)*, Series P–25, No. 965, 1985; ——, "Marital Status and Living Arrangements: March 1982," *CPR*, Series P–20, No. 380, 1983; and ——, "Marital Status and Living Arrangements, March 1983," *CPR*, Series P–20, No. 389, 1984. **Number of births:** National Center for Health Statistics, "Advance Report of Final Natality Statistics," *Monthly Vital Statistics Report:* for 1982, Vol. 33, No. 6, Supplement, 1984; for 1983, Vol. 34, No. 6, Supplement, 1985; and for 1984, Vol. 35, No. 4, Supplement, 1986.

Table 4 (page 8) presents 1983 abortion numbers, rates and ratios examined simultaneously by the woman's age, marital status and race. Of all teenagers who had abortions, 96 percent were unmarried. In all, 289,790 white unmarried teenagers and 120,850 nonwhite unmarried teenagers obtained abortions. Of the women under age 15 who had abortions, most were nonwhite—8,900, compared with 7,450 white women.

The abortion rates of both married and unmarried women show the same pattern—a steady decline with increasing age—except in one respect: Unmarried teenagers have a lower rate than do unmarried women in the 20–29 age-groups, because many such adolescents are not sexually active. However,

Table 3. Abortion rate and abortion ratio, by race, according to age and marital status, 1983

Characteristic	Rate		Ratio	
	White	Nonwhite	White	Nonwhite
Age				
<20	39.1	73.2	42.7	41.3
<15	(5.1)	(27.6)	(u)	(u)
15–19	(38.2)	(67.9)	(u)	(u)
20–24	42.7	93.9	28.5	40.8
25–29	24.5	65.3	18.6	37.6
30–34	13.9	38.5	19.1	37.8
35–39	7.7	20.8	30.8	45.5
≥40	2.7	5.6	50.6	53.9
Marital status				
Married	8.1	29.0	7.7	19.6
Unmarried	42.2	69.0	70.3	52.9

Note: In this and subsequent tables, u = unavailable.

Sources: **Number of abortions**—CDC, 1986 (see sources for Table 1), adjusted by an iterative procedure to the age, race and marital status distributions shown in Table 1. **Numbers of women and births—see sources** for Table 2.

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*In practice, a certain proportion of the abortions and births at each age are shifted to one year earlier. For a description of the procedure and computer program used to estimate age at conception from age at birth or abortion, see: C. Tietze, *Induced Abortion: A World Review, 1983*, fifth ed., The Population Council, New York, 1983, p. 105.

when only unmarried teenagers who are sexually active are considered, their abortion rate is higher than that of unmarried women in any other age-group (not shown). Married adolescents also have a higher abortion rate than do married older women.

Whereas the rate of abortion decreases with a woman's age, the proportion of pregnancies terminated by abortion almost uniformly increases with age across the subgroups. The highest abortion ratio is found among unmarried white women 40 and older, who resolve 82 percent of their pregnancies by abortion.

In Table 5, rates of abortions and births among teenagers are summed, along with an estimate for miscarriages and stillbirths,* to yield the overall adolescent pregnancy rate in each of the years between 1977 and 1983. (Because there is such widespread concern over levels of teenage pregnancy in the United States, we have limited the calculations to 15–19-year-olds.) The pregnancy rate is based on age at pregnancy outcome (birth or abortion), because it is the measure more commonly used, it is easy to calculate and it is understood intuitively. However, basing the pregnancy rate on age at conception—which is nine months younger than the age at birth and 2–3 months younger than the age at abortion—is more accurate. To indicate the difference in the results produced by the two approaches, we show both pregnancy rates for teenagers of all races.

After rising through the 1970s, the teenage pregnancy rate peaked around 1980–1981 and fell slightly in 1982 and 1983. Among whites, the trend has mirrored the overall pattern, but among nonwhites, the pregnancy rate declined between 1980 and 1982, and then rose slightly in 1983. The abortion rate among white teenagers has remained unchanged since 1979; that for nonwhites increased in 1983, after having held steady the previous few years. Unlike the birthrate of white adolescents, the nonwhite rate has fallen continually since the 1960s.

The relative differentials between the pregnancy, birth and abortion rates of nonwhite and white teenagers narrowed somewhat between 1978 and 1981. The nonwhite pregnancy rate was 107 percent higher than the white rate in 1978, but was 90 percent higher in 1981. Similarly, the racial gap in the birthrate declined from 124 percent to 104 percent, and that in the abortion rate, from 85 percent to 72 percent. Between 1981 and 1983, however, the trend was reversed,

Table 4. Estimated number of abortions, abortion rate and abortion ratio, by age, according to marital status and race, 1983

Measure	Married			Unmarried		
	Total	White	Nonwhite	Total	White	Nonwhite
No.	**294,670**	**208,220**	**86,450**	**1,280,330**	**876,140**	**404,190**
<15	80	0	80	16,270	7,450	8,820
15–19	16,960	14,040	2,920	394,370	282,340	112,030
20–24	80,590	58,850	21,740	467,540	322,530	145,010
25–29	87,710	59,600	28,110	240,570	157,010	83,560
30–34	62,930	42,690	20,240	108,630	70,290	38,340
35–39	35,130	24,650	10,480	42,960	29,130	13,830
≥40	11,270	8,390	2,880	9,990	7,390	2,600
Rate	**10**	**8**	**29**	**48**	**42**	**69**
<20	33	30	63	46	40	73
<15	u	0	u	9	5	27
15–19	33	30	61	44	39	68
20–24	20	16	64	69	61	101
25–29	14	10	41	58	51	82
30–34	9	7	27	38	34	49
35–39	6	5	17	19	18	25
≥40	2	2	5	6	6	6
Ratio	**9**	**7**	**19**	**63**	**70**	**52**
<20	6	5	11	58	66	45
20–24	8	7	17	65	72	53
25–29	8	6	19	67	73	58
30–34	11	9	22	68	73	61
35–39	21	18	33	72	75	65
≥40	40	38	46	78	82	68

Sources: **Number of abortions**—based on data from 13 states (see reference 5), adjusted by an iterative procedure to the 1983 totals shown in Table 1. **Numbers of women and births**—see sources for Table 2.

Table 5. Abortion rate, birthrate and pregnancy rate per 1,000 women aged 15–19, by race, 1977–1983

Measure	1977	1978	1979	1980	1981	1982	1983
All races							
Abortion rate	37.5	39.7	42.4	42.9	43.3	42.9	43.5
Birthrate	52.8	51.5	52.3	53.3	52.7	52.6	51.7
Pregnancy rate, age at outcome*	104.6	105.4	109.4	111.2	110.8	110.3	109.9
Pregnancy rate, age at conception*,†	119.3	122.5	127.2	127.6	128.5	127.4	125.9
White							
Abortion rate	u	34.9	38.3	38.3	38.5	38.1	38.2
Birthrate	44.1	42.9	43.7	45.0	44.7	44.5	43.6
Pregnancy rate, age at outcome*	u	89.9	94.6	96.1	96.0	95.2	94.3
Nonwhite							
Abortion rate	u	64.7	63.1	66.0	66.1	65.5	67.9
Birthrate	99.5	96.0	96.5	94.7	91.3	90.7	89.3
Pregnancy rate, age at outcome*	u	186.3	185.2	186.3	182.3	180.9	181.9

*Includes estimated number of pregnancies ending in miscarriages and stillbirths.

†Based on births six months later than abortions, to match time of conception for births and abortions; ages reduced by nine months for births and three months for abortions.

Sources: **Number of abortions**—joint distributions by age and race from the CDC (for 1982–1983, see sources for Table 1; for earlier years, see CDC, *Abortion Surveillance 1981*, Atlanta, 1985, and earlier volumes), adjusted by an iterative procedure to the age and racial distributions estimated by the AGI (for 1982–1983, see Table 1; for earlier years, see reference 2, pp. 62 and 64). **Number of women**—for 1977–1980, U.S. Bureau of the Census, "Preliminary Estimates of the Population of the United States, by Age, Sex and Race: 1970 to 1981," *Current Population Reports (CPR)*, Series P–25, No. 917, 1982, Table 2; for 1981, ——, "Estimates of the Population of the United States, by Age, Sex and Race: 1980 to 1983," *CPR*, Series P–25, No. 949, 1984, Table 2; for 1982–1983, see sources for Table 2. **Number of births**—National Center for Health Statistics, "Advance Report of Final Natality Statistics," *Monthly Vital Statistics Report:* for 1977, Vol. 27, No. 11, 1979; for 1978, Vol. 29, No. 1, 1980; for 1979, Vol. 30, No. 6, Supplement (2), 1981; for 1980, Vol. 31, No. 8, Supplement, 1982; for 1981, Vol. 32, No. 9, Supplement, 1983; for 1982–1984, see sources for Table 2.

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*The estimate—equaling 10 percent of abortions plus 20 percent of births—is based on a model developed by the late Christopher Tietze and by John Bongaarts of The Population Council.

and the racial differentials widened slightly—to 93 percent (in the pregnancy rate), 105 percent (in the birthrate) and 78 percent (in the abortion rate).

Conclusion

Overall, patterns of abortion utilization in the United States have been relatively stable in recent years. The majority of abortion patients continue to be young (under age 25), unmarried and white. The highest abortion rates are still found among women aged 18–19 and 20–24, among unmarried women and among nonwhite women; these are the groups that are most in need of programs for the prevention of unplanned pregnancy.

The lack of change in both the abortion rate and the proportion of pregnancies ending in abortion between 1981 and 1983 suggests that American couples continue to have difficulty in preventing unplanned pregnancies. Therefore, unless policy changes are made or new contraceptive technologies are introduced, it appears unlikely that major progress will be made in improving Americans' control over their fertility or in bringing disadvantaged groups closer to the rest of society in their ability to prevent unplanned pregnancy.

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The Harassment of U.S. Abortion Providers

By Jacqueline Darroch Forrest and Stanley K. Henshaw

Summary

In 1985, 47 percent of abortion providers experienced antiabortion harassment. The approximately 1,250 facilities that were affected served 83 percent of all abortion patients. Nonhospital facilities performing 400 or more abortions a year were the most likely targets of antiabortion activity; 88 percent reported at least one type of harassment during the year. Picketing occurred at 80 percent of these facilities. Only six percent experienced picketing alone; the average facility was subjected to five different types of activity. Seventy-three percent of the facilities were the target of at least one illegal activity.

A number of problems that made abortions more difficult or costly to provide were significantly related to the occurrence of antiabortion activity: increased expenditures for security and for legal services, loss of fire and casualty insurance, new licensing requirements and problems hiring staff. However, harassment did not appear to have affected the average number of abortions performed at large nonhospital facilities or the fee charged.

Background

Each year more than three million women in the United States experience an unplanned pregnancy.[1] About half of these women—1.5 million—obtain an abortion;[2] undoubtedly, many more consider the option of abortion.

Women who explore the availability of abortion in their area may hear not only the information they need about services, but also potentially frightening stories of harassment of providers and their patients by antiabortion activists. Such stories probably add to the stress of obtaining an abortion. In addition, harassment directed against abortion facilities threatens the very availability of abortion services for women who need them.

Harassment of providers, staff and patients includes such activities as picketing outside clinics, tracing the identity of patients and vandalizing and destroying facilities.[3] Bombings and arson are the most frightening and violent forms harassment takes. The National Abortion Federation has documented the extent of such incidents over the past 10 years. It reports that 31 providers received bomb threats in 1986, five were subjected to attempts at arson or bombing and six facilities were damaged or destroyed by such attacks.[4] Other forms of harassment can also have harmful effects on providers and on women forced to obtain abortions in a hostile environment. This article attempts to summarize the degree to which those involved in providing and obtaining legal abortions have encountered hostile activities in recent years.

In the most recent of its periodic surveys of abortion providers in the United States, The Alan Guttmacher Institute included a series of questions about the kinds of antiabortion activities that may affect the provision of services. The survey was fielded in the late spring and the summer of 1986. Hospital administrators were asked about the levels of outside pressure to restrict or eliminate abortion services that they had encountered in 1984 and 1985. Nonhospital providers were asked about 12 specific antiabortion activities, as well as about any problems they had had with insurance, licensing requirements and the general operation of their facilities. They were also asked whether the cost or difficulty of providing abortion services had significantly increased.

A total of 722 hospitals and 927 nonhospital facilities answered the questions on harassment. (Facilities that did not respond to the survey initially were sent the questionnaire a second time.) The respondents represented 62 percent of the total number of hospitals that provided abortion services in 1985 and 63 percent of the nonhospital facilities.

A comparison of providers that responded

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to the initial mailing with those that answered upon follow-up revealed no difference in the proportions subjected to harassment. Nevertheless, it is possible that providers who did not answer the questions on antiabortion activities were less likely to have experienced harassment than were those who answered the questions. If so, our estimates of the extent of harassment are inflated. Since it is not clear what, if any, bias exists in patterns of response, we have excluded all nonrespondents from the analysis.

Table 1. Percentage of large nonhospital facilities (those providing 400 or more abortions) that experienced harassment in 1985; percentage of affected facilities reporting multiple episodes of harassment; and percentage of affected facilities reporting an increase over 1984; by type of activity

Type of activity	All facilities (N = 501)	≥5 times	≥20 times	Increase from 1984
Picketing	80	82	68	50
Literature distributed inside facility	48	42	22	59
Bomb threats	48	15	3	58
Physical contact with or blocking of patients by picketers	47	62	34	56
Mass scheduling of no-show appointments	46	73	48	46
Demonstrations loud enough to be heard in patient areas	42	60	38	65
Invasion of facility by demonstrators	29	14	4	60
Vandalism	28	12	5	53
Jamming of telephone lines	22	54	41	66
Death threats	19	18	4	65
Tracing of patients' license plates	16	41	21	63
Picketing of homes of staff members	16	27	8	73

Antiabortion Harassment

Analysis of the responses indicates that the level of harassment in 1985 varied by type and size of provider; however, no group was immune from such activity. Among the hospital providers, 29 percent reported that they did not know if there had been any pressure from outside the hospital to restrict or eliminate their abortion services. (In some cases, questionnaires were filled out by records staff rather than by administrators.) Of hospitals with information on the question, 36 percent had been subjected to such pressure in 1985; 64 percent had not. Hospitals providing 400 or more abortions during 1985 were slightly more likely to report such pressure than were those in which fewer abortions were performed (41 percent compared with 35 percent). Seventy-six percent of the hospitals reporting any antiabortion pressure in 1985 said it was more intense than it had been in 1984.

The level of pressure against nonhospital facilities providing abortion services appears to be greater than that directed at hospitals, although comparison is difficult because the two groups were asked different questions. Sixty-one percent of nonhospital facilities responding to the harassment questions reported that they had experienced at least one type of antiabortion activity during 1985. The level of activity differed widely by the average number of abortions the provider performed. Among facilities reporting fewer than 400 abortions (overwhelmingly, private physicians performing abortions in their offices), 30 percent had experienced at least one form of harassment, most commonly picketing (reported by 19 percent). Between two and 12 percent of the small-scale providers reported each of the 11 other types of harassment listed in the questionnaire.

Large nonhospital facilities (those providing 400 or more abortions per year) are the major source of abortion services for U.S. women. Such facilities, which may be either freestanding clinics or physicians' offices, accounted for 74 percent of all abortions performed in 1982.[5] Because of the major role of large nonhospital facilities in providing abortions, the remaining analysis in this article focuses on the 501 respondents who fell into this category.

Eighty-eight percent of the large nonhospital facilities reported that they had experienced at least one type of antiabortion harassment during 1985. As Table 1 shows, the most widespread type of activity was picketing, which occurred at four out of five facilities. No other single activity was reported by more than half the providers, but almost half (42–48 percent) reported such activities as distribution of antiabortion literature inside the facility, bomb threats, physical contact with or blocking of patients by picketers, numerous no-show appointments made to disrupt the scheduling of legitimate patients and demonstrations loud enough to be heard by patients inside the facility. Twenty-nine percent of facilities were invaded by demonstrators in 1985, and almost as many were vandalized. More than 20 percent of facilities had their telephone lines jammed. Antiabortion harassment was directed against the staff members of a number of facilities: Nineteen percent of the providers said their staff members had received death threats, and 16 percent reported that the homes of staff members had been picketed. Sixteen percent of the providers reported that patients had been harassed with phone calls or visits at home after antiabortion activists had traced their license plates to ascertain the women's identities.

Antiabortion harassment was seldom limited to one type of activity. Only six percent of all respondents were subjected only to picketing, while 82 percent experienced multiple forms of harassment. On average,

Table 2. Percentage of large nonhospital facilities that reported antiabortion harassment, and among those reporting harassment, average number of types of activity reported, by characteristic of facility, 1985

Characteristic	Percent	Number of types of activity
All facilities	**88**	**5.0**
Type		
Clinic	92	5.3
MD's office	68	3.4
Region		
Midwest	95	5.7
South	93	5.4
East	84	4.4
West	76	4.3
Percent of visits for abortions		
≥75	96	5.5
50–74	87	5.7
25–49	89	5.1
10–24	85	4.5
<10	68	3.1

providers who experienced any harassment reported that five different types of antiabortion activity had been directed at the facility, its staff and patients. Between 92 and 100 percent of providers who were subjected to an activity other than picketing were also picketed. More than half of the facilities experiencing any form of antiabortion harassment also reported bomb threats (55–86 percent, depending on the other type of harassment reported), loud demonstrations (52–84 percent), physical contact with or blocking of patients by picketers (59–83 percent), false appointments (54–83 percent) and distribution of antiabortion literature inside the facility (57–82 percent). In addition, invasion of the facility by demonstrators was reported by at least half (50–62 percent) of the facilities that also reported physical contact between picketers and patients, loud demonstrations, distribution of literature inside the facility, tracing of patients' license plates and picketing of the homes of staff members. Approximately 54 percent of facilities subjected to phone jamming and tracing of patients' license plates also reported vandalism.

"The American public generally opposes the violence that has been directed against abortion providers. Yet . . . antiabortion harassment is widespread and frequent, takes many forms and increased in intensity between 1984 and 1985."

Under federal law, six of the 12 antiabortion activities listed in Table 1 are illegal: bomb threats, death threats, invasions by demonstrators, picketing involving physical contact with or blocking of patients, jamming of telephone lines and vandalism. Seventy-three percent of all facilities have been the target of at least one of these illegal activities. Activities other than these six are illegal in some states, depending on the circumstances.

As Table 1 shows, most instances of antiabortion harassment are not single, isolated occurrences, but rather part of a pattern of continuing pressure. Among providers subjected to at least one of five antiabortion activities—picketing, physical contact with or blocking of patients by picketers, mass scheduling of no-show appointments, loud demonstrations and jamming of phone lines—the majority reported that the activity had occurred at least five times; and a large minority said it had occurred 20 times or more. Even the less common forms of harassment occurred five or more times in at least 12 percent of the facilities subjected to such activities.

Of the providers who reported some type of antiabortion harassment (except the scheduling of no-show appointments), at least half said that the activity had occurred more frequently in 1985 than in 1984. It is possible that respondents simply perceived an increase that they could not verify. However, because the proportions reporting an increase varied across the types of activity, it appears that providers were not responding merely to an overall impression (see Table 1, column 4). The forms of harassment experienced by fewer than 25 percent of the providers—phone jamming, death threats, tracing of patients' identities and picketing of staff homes—are among those most often described as having increased.

Frequent Targets

While antiabortion activity against large nonhospital facilities is widespread, certain characteristics may identify the providers most likely to be targets of harassment. On the basis of the number of different types of antiabortion activities reported by providers of more than 400 abortions in 1985, and the number of times those activities occurred, an index of harassment was developed. A multiple regression analysis using this index (not shown) found that the characteristics significantly associated with harassment were type of facility, region of the country and proportion of patient visits that involved abortion services. Characteristics that bore no significant relationship to the degree of harassment in 1985 were the number of abortions performed beyond 400, the change between 1984 and 1985 in the number of abortions performed, the maximum gestation at which abortions were performed and the amount charged for an abortion.

Table 2 summarizes the findings for those characteristics found to be statistically significant. While 88 percent of all large nonhospital facilities reported at least one type of antiabortion activity, 92 percent of clinics did so, compared with 68 percent of physicians' offices. Clinics that experienced any of the 12 types of antiabortion activity measured reported an average of 5.3 types, compared with an average of 3.4 types at office facilities. Offices were less likely to report each specific type of harassment, and were especially less likely to report bomb threats, vandalism and death threats. There was no difference, however, in the proportions of clinics and offices that reported an increase in harassment between 1984 and 1985 (not shown).

Almost all large-scale providers located in the Midwest and the South reported antiabortion harassment in 1985 (95 and 93 percent, respectively). Providers in those regions who experienced harassment reported an average of 5.4–5.7 types of antiabortion activity. Although harassment was very common in the East and the West, the extent of antiabortion activity there was significantly lower than in the Midwest and the South. Antiabortion activities were reported by 84 percent of providers in the East and 76 percent in the West. They reported, on average, 4.4 and 4.3 types of activity, respectively.

Reports of harassment were greatest among health care facilities that were primarily providers of abortion services. In the case of facilities to which the majority of patients came in order to obtain abortions, at least 87 percent experienced some form of antiabortion harassment in 1985. Facilities serving mostly abortion patients were also subject to more types of antiabortion activities than were other providers. However, the majority of facilities where most patients came for reasons other than abortion were also subjected to harassment. Sixty-eight percent of facili-

Table 3. Percentage of large nonhospital facilities that experienced service problems, according to antiabortion activity, by type of problem

Type of service problem	All facilities (N=473)	No activity (N=55)	Picketing only (N=29)	Activity beyond picketing (N=391)
Higher security costs (nonpersonnel)	44	12	7	52**
Higher legal costs	44	25	14	49**
Increased security personnel	32	6	7	37**
Malpractice insurance ended	31	18	32	32
New license requirements	26	5	21	29*
Difficulty hiring staff	25	9	7	28*
Fire and casualty insurance ended	21	4	14	24*
Difficulty obtaining hospital backup	10	10	3	11

*Significant relationship between service problem and antiabortion activity other than picketing at $p<0.01$.

**Significant relationship at $p<0.001$.

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ties where fewer than 10 percent of patient visits were for abortions reported antiabortion activity, and they cited an average of 3.1 types of harassment.

Other Pressures

In addition to questions about specific antiabortion activities, the survey also asked large nonhospital providers about more general problems that may be linked to the provision of abortions. Table 3 (page 11) shows that 44 percent of providers reported that within the 12 months prior to the survey, they had been forced to increase expenditures for security (other than personnel), and 44 percent had incurred increased legal expenses. Thirty-two percent had had to employ more security personnel, and a similar proportion had been notified that their malpractice insurance was being canceled or would not be renewed. Twenty-six percent said they had been asked to meet new or newly interpreted licensing requirements, and 25 percent reported greater difficulty hiring staff. Twenty-one percent of the facilities had been notified that their fire and casualty insurance was being terminated. Ten percent of providers cited greater difficulty arranging for hospital backup.

Malpractice insurance termination and increased difficulty arranging for hospital backup were the only problems not significantly related to the occurrence of antiabortion harassment. Fifty-two percent of the providers that had experienced harassment other than picketing reported increased expenses for security other than personnel in the last 12 months, compared with only 12 percent of providers untouched by the types of antiabortion activity covered in the survey. Facilities that increased their expenditures for security and their security personnel were especially likely to have experienced physical contact with or blocking of patients by picketers, loud demonstrations, distribution of antiabortion literature inside the facility, vandalism, invasion by demonstrators and bomb threats (not shown).

Although 25 percent of providers who reported no antiabortion activity in 1985 said they had incurred increased legal costs, providers who had experienced harassment that went beyond picketing were twice as likely to report an increase in their legal expenses. The forms of harassment that facilities with increased legal expenses were most likely to have been subjected to were picketing that included physical contact with patients, loud demonstrations, distribution of antiabortion literature inside the facility and no-show appointments (not shown).

Providers were much more likely to have had problems with licensing requirements, hiring of staff and fire and casualty insurance if they had experienced antiabortion harassment. Those facilities that reported problems with licensing requirements were particularly most likely to have experienced harassment through bomb threats, mass scheduling of no-show appointments and physical contact between picketers and patients (not shown).

Providers who had found it harder to hire staff in the previous 12 months were more likely to report physical contact with or blocking of patients by picketers, loud demonstrations, bomb threats, no-show appointments and tracing of license plates (not shown). Those providers who were notified that their fire and casualty insurance would be terminated were especially likely to have experienced bomb threats and loud demonstrations in 1985 (not shown).

Malpractice insurance difficulties, although not significantly related to antiabortion activity in this analysis, were nonetheless considered by providers to be one of their biggest problems. Abortion providers were asked an open-ended question about whether any factors in the previous year had greatly increased their costs or had made it more difficult for them to provide abortion services. About half (53 percent) said yes, and the most common factor was malpractice insurance (cited by 36 percent of those who found services more costly or difficult to provide). Although clinics were more likely than office facilities to have been subjected to all types of antiabortion activities, more physicians' offices than clinics cited malpractice insurance problems (50 percent compared with 34 percent). This finding provides further evidence that malpractice insurance problems are probably unrelated to antiabortion activity.

Other frequently cited factors, listed by 13–18 percent of facilities reporting increased difficulties providing abortion services, were increased expenditures for security, fire and casualty insurance problems, picketing and increased legal expenses. Only three percent of office providers said security costs were making abortion services more difficult or costly to provide, compared with 21 percent of clinic providers.

Discussion

The data from this analysis demonstrate that the providers of abortion services are subjected to special pressures, even if such services are a very small part of their overall practice. Antiabortion activists have publicly proclaimed that their goal is to stop the provision of abortion services.[6] As it is, women's access to abortion services rests on the existence of a relatively small number of facilities willing and able to provide this specific type of health care. For example, in 1982, only 26 percent of the 5,400 short-term general non-Catholic hospitals in the United States performed any abortions.[7] Of the 21,000 office-based obstetrician-gynecologists in the United States in 1982, fewer than half (42 percent) provided abortion services.[8] As a result of the lack of facilities, many women have had difficulty obtaining abortions. In 1982, 28 percent of all women aged 15–44 lived in counties where there was no abortion provider,[9] and in 1981, 101,000 women went outside their states of residence to obtain abortions.[10]

In a future article presenting other data from the AGI abortion provider survey, we will investigate whether there have been any sharp changes in the number and types of facilities providing abortion services in the United States. This analysis indicates, however, that antiabortion activity directed against a clinic or physician is unrelated to any change between 1984 and 1985 in the average number of abortions provided by large nonhospital facilities still offering abortion services in 1985. Thus, we conclude that the harassment of abortion providers has not succeeded in reducing the number of abortions performed by the facilities analyzed.

Our analysis has shown, however, that many types of harassment employed by antiabortion activists result in higher costs to providers for insurance, increased security and legal representation. Yet preliminary data suggest that the average charge in real dollars for a first-trimester nonhospital abortion declined between 1983 and 1986 (that is, after adjusting for changes in the cost of living).[11] It remains to be seen whether the problem of obtaining insurance and the other external pressures on abortion facilities will force providers to increase their charges in the future.

The data presented in this article demonstrate the extent to which antiabortion activities—in the form of bomb and death threats and picketing of homes—affect the staff of abortion facilities. In no other U.S. setting are health care workers likely to be threatened for providing services that are legal.

We estimate that if the respondents in our survey are representative of all abortion providers of similar types and sizes, then 47 percent of all U.S. providers (approximately 1,250) were subjected to antiabortion pressure in 1985. Since harassment affects almost all of the large nonhospital facilities, which serve most of the country's abortion patients, the proportion of such patients who obtained abortions in 1985 from providers that were subjected to antiabortion pressure was even greater—83 percent.

Harassment is usually not continual, and many of the women who went to clinics, hospitals or doctors' offices may not have personally witnessed or been subjected to antiabortion activities. However, many were probably aware that such activities might occur during their visit, and it is appropriate to question whether that awareness made obtaining an abortion more difficult for them than was necessary.

For women who do encounter direct harassment, obtaining an abortion can be a frightening experience. Patients and their companions who enter a facility that is being picketed run the risk of verbal assault, possible physical contact and even harassment at home afterward. The effects of such harassment on women who are already undergoing a stressful experience can only be adverse. Since most of the health care providers we surveyed also offer services other than abortion, patients seeking other types of care may encounter harassment as well.

The American public generally opposes the violence that has been directed against abortion providers.[12] Yet our study shows that antiabortion harassment in the United States is widespread and frequent, takes many forms and increased in intensity between 1984 and 1985.

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Contraception and the Status of Women: What Is the Link?

By Nancy Birdsall and Lauren A. Chester

> **"Low fertility . . . is not sufficient or even necessary for improving the status of women. Rather, . . . women's knowledge that they can . . . control the timing of their childbearing . . . enlarges [their] economic choices and enhances their status."**

Introduction

Much has been written about the possibility that improvements in the status of women reduce fertility.[1] However, little attention has been paid to other possibilities—namely, that reductions in fertility (for reasons unrelated to changes in the status of women) improve the status of women; or that certain other changes both lower fertility and improve the condition of women, without any direct causal link between women's status and fertility. In this article, we explore the notion that easy access to near-perfect contraception—that is, contraception that allows virtually complete control over the occurrence and timing of childbearing—is an important factor contributing to improvements in the status of women, in and of itself, whether or not it lowers fertility. We measure women's status in terms of education and wage rates relative to those of men, although these two variables are by no means the only definition of the status of women.

Access to contraception in a given society is a function of service availability and cost, technological advances and political and cultural views. By this definition, access is determined by outside forces, not by the woman herself. Nor, following this definition, is access for a particular woman affected by her personal fertility decisions or desires.

Of course, the practice of near-perfect contraception (or of any contraception at all) by a particular woman is affected by her own desired fertility. Women who wish to limit their childbearing are obviously more likely to practice contraception than women who do not. But we are concerned here with the effect of access to near-perfect contraception on women's status in a community or society relative to men, irrespective of fertility, not with the effect of a particular woman's practice of contraception on her status.

It might be argued that the fertility desires of women do determine access as well as practice, insofar as women who are more interested in regulating their fertility will, all other things being equal, be more effective users of whatever contraceptive technology is available and, thus, have better "access" to near-perfect contraception. (For example, women who are concerned about restricting their childbearing are more likely than others to choose the pill or the IUD as a method. And if they are pill users, they are more likely than less-motivated women to maintain the proper regimen.) Yet, variations in use-effectiveness* across different educational groups or societies are small, compared with differences in access to contraception.

Imperfect Control over Childbearing

Until recently, control over childbearing was limited in all societies. Traditional controls included delayed marriage and, for women in a sexual union, the use of rhythm, withdrawal, abortion, breastfeeding and a variety of douches or herbal mixtures. Although on average, the use of such methods can assure that fertility will remain below natural levels for a whole population, a particular woman in a sexual union who relies solely on traditional methods other than abortion is likely to have an average of 7–10 births over 20 years.[2] The use of more effective methods, such as the condom or the diaphragm, considerably reduces her chance of conceiving, but leaves the risk as high as five percent a month.[3]

Except for the pill, the highly effective methods do not provide control over the timing of births throughout a woman's reproductive years. Sterilization is not appropriate until the desired number of children have been born. The IUD is not recommended for women who have not yet had a child. Abortion provides a means of control over the entire reproductive period, but exacts high psychological costs in most societies, and high costs in time, inconvenience and, sometimes, risks to health in virtually all societies.

For those reasons, the pill, introduced in about 1960, was a breakthrough. The pill gives childless women near-perfect control over the delay of first births and gives women who already have children but want more near-perfect control over spacing. Moreover, because it separates contraception from sexual activity, the pill relieves users of any uncertainty about their own willingness and ability to carry out their intentions of avoiding conception.

But in every society before 1960 and still today in many societies, women of childbearing age have been faced with high probabilities of failure in their efforts to avoid conception.

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*Use-effectiveness is a term used to describe the actual effectiveness of a contraceptive method among a particular group of women (or couples), taking into account failure to use the method correctly as well as inherent technical failures.

Education and Job Choice

Uncertainty about the timing of pregnancy (as well as the number of children a woman will have) explains why many schooling and job decisions are made differently by and for women than they are by and for men. Most girls and young women (and their parents) have had to make plans about their education and eventual job choices bearing in mind the likelihood that they would have children at times they could not predict.

The literature of development economics emphasizes that education is not solely, or even primarily, something that is purchased for its own good. Education is also purchased for investment purposes. In the language of the economists, the demand for education falls as the cost of education rises and the benefits or rewards fall. For example, if doctors' fees rise fast enough, the demand for medical education will rise as well, even though the cost of a medical education may be rising too. Similarly, if men receive, on average, higher long-term benefits from their education than do women, the demand for education among men will be higher than among women, as long as the costs of paying for education are not higher for men. Women (and parents of girls) will, with good reason, invest less in their education than men. This is most obvious in developing countries, where parents face more difficult choices, where education is viewed largely as an investment, and where enrollment rates at all levels tend to be lower for girls than for boys.[4]

Why is it, though, that the economic benefits of education are lower for women than for men? One explanation is job or wage discrimination. If women who are identical to men in every respect but gender are less likely to get certain jobs or, within jobs, are likely to be paid less, the return to their investment in education will be lower.

However, elimination of discrimination alone would probably not bring women's returns on their education into line with those of men. One reason is obvious. If over their lifetimes, because of childbearing and childrearing, women spend less time in the labor market than men, the average return on their education will be lower than that of men, even if they hold the same jobs at the same salaries while they are actually working.

Less obvious, but probably more important, are the occupational choices women make to start with. Because of the uncertainty they face in the number and timing of children they might have, and the sensible desire to maintain sufficient flexibility in work to allow for child care, women will be likely to maximize their expected lifetime earnings by choosing certain kinds of jobs—"female" jobs. For women with relatively little education, these would be jobs that can be combined with child care or that allow women to work flexible hours, such as in agriculture, petty retail trade and cottage industry—knitting, sewing and other home manufacture. For more highly educated women, these would be jobs with low entry and exit costs, such as teaching, nursing and clerical work in offices. It is easy to move into these jobs, and quitting for several years does not reduce subsequent salary levels much. These jobs thus more easily allow women the option to drop out of the labor force for brief periods.*

Jobs in the first category, those that can be combined with child care, are characterized by low but steady earnings and are especially suitable if women anticipate not only uncertainly timed births but many births. Women can begin jobs in this category early, since such work requires little schooling. But wages are low and rise very little. Jobs in the second category cannot be combined with child care on a day-to-day basis, but they do make it relatively easy for women to drop out of the labor force completely while their children are young. Wages in this category are higher, since the jobs require some education, but as in the first category, the wages do not rise much over a lifetime (even for women who do work continuously).

The earnings of women who opt for typically female jobs rise less steadily than those of men in typically male jobs. But in societies where access to contraception is limited, the lifetime earnings of women in typically female jobs might well end up higher than the earnings of similarly educated women who opt for typically male jobs.† From this point of view, women's choice of typically female jobs that require less educational investment and that allow easy reentry into the job market is not surprising and is the result not only of possible discrimination but also of women's own rational choice, given their situation. (For a detailed example of this type of situation, see the sidebar on page 17.)

Low Completed Fertility Is Not Enough

Improved access to contraception, especially to highly reliable spacing methods like the pill, allows women to do more than simply reduce their family size. It also allows them to time and space their births. It is probably the ability of women to time their childbearing confidently, including their first birth, that is so important for improvements in their status.

Modern-day Japan, for example, is a society in which fertility is low but where the advancement of women has been extremely limited. The total fertility rate in Japan is among the lowest in the world (1.8 in 1984[5]), yet couples rely heavily on the traditional and less-effective methods of birth control and on abortion to control their reproduction. Japanese couples have one of the world's highest rates of condom use: In the mid-1970s, about 75 percent of all contraceptive users relied on this method,[6] and only three percent were using the pill.[7] By contrast, in the United States in 1973, only 13 percent of married contraceptive users relied on condoms, whereas 36 percent used the pill.[8]

The use of less-effective methods in Japan is dependent upon relatively easy access to and general acceptability of legal abortion services. During the 1960s, the number of legal abortions in Japan exceeded the number of births.[9] According to a national survey of Japanese women requesting abortions in 1969, 63 percent had had at least one previous abortion, and among one-fourth of these women, fewer than 12 months had elapsed since their last abortion.[10]

Widespread use of abortion might be interpreted as providing near-perfect control over childbearing. On the other hand, it is likely that abortion is used more to prevent unwanted births than to terminate poorly timed conceptions. Japanese women probably face a higher incidence of poorly timed births than do U.S. women. To the extent that this is the case, Japanese women are less easily able to combine work and family life once they are married.

How do Japanese women compare in education and employment with women in other industrialized countries? In 1982, 33 percent of college students in Japan were women, compared with 52 percent in the United States, 51 percent in Canada and over 40 percent in nearly all Western European countries.[11] Japanese women enrolled in college are more likely than their counterparts in Finland and Austria (two countries with approximately the same GNP as Japan) and in the United States to be pursuing traditionally female fields of study. Fifty-six percent of female students in Japan are enrolled in the humanities, education or the fine arts, compared with 32 percent of those in Finland and 39 percent of those in Austria. Whereas 18 percent of female students in both Finland and the United States and 16 percent of those in Austria are studying medicine and health-related courses, the comparable proportion in Japan is only seven percent.[12]

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*This is not to suggest that women cannot stay at work even when their children are young. More women are now doing so than ever before in the United States. (Perhaps half of the mothers of children under three are now in the labor force in the United States.) But the costs—in terms of time and energy—are substantial. Research shows working women with young children have little "passive leisure"; time pressures are so great they give up sleep. By reducing leisure, they do manage to spend time with their children. (See reference 4).

†Unfortunately, this is hard to show definitively. Until the last few decades, very few women with children trained for and obtained typically male jobs—in the skilled crafts, engineering, corporate finance, etc.—probably both because of discrimination and because of choice, given the difficulty of combining such jobs with uncertainly timed childbearing.

Women constitute 39 percent of the economically active population in Japan, slightly below the levels found in the United States (43 percent) and Canada (41 percent).[13] In Japan, about one-tenth of all economically active women are employed in professional, technical, administrative or managerial occupations, while in Canada and the United States, one-quarter of working women hold these types of positions. In contrast 41 percent of Japanese women are employed as salespeople, production workers or laborers, compared with 21 percent in the United States and 16 percent in Canada.[14]

Obviously, many factors, including long-standing cultural ones, affect the education and employment situation of Japanese women. A direct link between those two measures of status and access to contraception would be difficult to forge. Yet, it seems inevitable that as access to effective contraception improves in Japan, greater control over the timing of childbearing will encourage more married women to combine family life with work outside the home (and to seek education geared to that combination).

There are also historical examples of women's achieving low fertility before the advent of effective and easily available contraceptive methods. At the 1910 U.S. census, women who had husbands employed in professional occupations and who had been married 20–24 years had a completed average fertility of 3.4 children.[15] Available data on the contraceptive use and coital frequency of a small sample of these women (covering the period 1892–1913 and collected by their doctor) show that 75 percent reported use of some kind of fertility control—douching and rhythm being the most commonly used methods. Analysts have suggested that the remarkable success these women had in controlling their levels of fertility while using only the least-effective methods was due to their low rates of coital frequency.[16] Women 25–45 years old reported a mean frequency of marital coitus (about 3–4 times a month) almost 50 percent lower than that observed among large populations since the 1930s.

If the analysts are right, those women were apparently able to restrict their lifetime fertility by consistent efforts to prevent conception—using a combination of then-available contraceptive techniques and infrequent intercourse. Thus, their completed fertility level was lower than that in many of today's developing countries and only about twice the present U.S. fertility level. However, these women were still obviously subject to considerable uncertainty over the timing of childbearing, and were thus constrained in their work choices, once married.

The validity of our proposition that it is not low fertility alone that improves women's status but rather women's confidence that they can control the timing of births seems most obvious in the case of infecund women. Such women have no way of knowing at the start of their childbearing years that they will have difficulty in conceiving; in most cases, they only acquire such knowledge gradually. In societies where contraception is not prevalent and women have little control over childbearing, infecund women have no higher status than women who have children. In fact, their status tends to be low.

Control over Timing of Births

In the United States, various fertility surveys provide evidence of dramatic changes in the ability of women to control their reproductive lives over the last 25 years. In fact, use of the pill, the IUD and male or female sterilization grew from 38 percent of the contraceptive practice of married women aged 15–44 in 1968 to 68 percent by 1982.[17] In the same period, reliance on the condom, rhythm, withdrawal and douching declined considerably. Moreover, the legalization of abortion in 1973 added a further dimension to fertility control in the United States. The U.S. abortion rate increased from 16 per 1,000 women aged 15–44 in 1973 to 29 per 1,000 in 1980.[18] This rise was probably attributable to increased availability of abortion services, increased numbers of women who were divorced, separated or never-married (and who were, therefore, at greater risk of unintended pregnancy) and increased rates of sexual activity among single women.

In short, U.S. women are now using different methods to plan their births from those used by their earlier counterparts. Until about 20 years ago, women relied heavily on traditional, less-effective methods to achieve some control over the number if not the timing of births. Now, as a result of pill use for spacing births and sterilization among couples who wish to terminate reproduction, control over the entire reproductive period can easily be achieved.

Data on unwanted and mistimed births support this assertion. In 1965, for example, 21 percent of all births were unwanted at the time of conception. This proportion fell to 13 percent in 1973 and to seven percent by 1982. In fact, 42 percent of the 1973–1982 reduction in U.S. fertility is attributable to the decline in unwanted births.[19] Women in all age-groups and of every economic level had fewer unwanted births in 1982 than had ever been the case. Mistimed births also declined, and the most significant drop occurred between 1965 and 1973,[20] probably as a result of rapid increases in use of the pill.

What have been the consequences of these changes for U.S. women? It is not, of course, possible to establish direct causation. However, progression toward near-perfect control over childbearing has probably contributed to marked changes in the education and employment patterns of U.S. women over the past two decades.

The ability to defer childbearing has probably made it easier for women to pursue educational opportunities in previously male-dominated fields of study that require lengthy time commitments. Women have received growing proportions of master's degrees since 1965–1966 and of doctoral degrees since 1970–1971.[21] There has also been a marked increase in the proportion of professional degrees in law, medicine and dentistry that are obtained by women, (from six percent in 1970–1971 to over 30 percent in 1985–1986[22]). The proportion nearly tripled for law and engineering between 1965 and 1970 and increased fourfold for dentistry after 1975.[23] In the same period, the proportion of women enrolled in traditionally female studies declined. Between 1966 and 1982, the proportion of all female college students who were studying education declined from 33 percent to 10 percent.[24]

Factors other than improved access to contraception, such as legislation forbidding discrimination against women in educational programs, were obviously critical in explaining women's educational gains. But the timing of these major shifts in the kinds of education women were seeking coincided almost exactly with the huge changes taking place in patterns of contraceptive practice.

The types of careers women selected also changed during the 1970s. More women were employed in traditionally male occupations in 1980 than in 1970, and there was some turning away from traditionally female occupations. The proportion of elementary school teachers who were women decreased from 84 percent in 1970 to 75 percent in 1980, while employment in professional, executive, administrative and managerial positions rose from 19 percent of all working women in 1970 to 31 percent by 1980.[25]

As delay in first births enables women to take advantage of educational opportunities, the ability to time births makes participation in the labor force easier. Fewer unscheduled births mean that women and their families are better able to combine the demands of raising children and of work. (Obviously, increasing pressures on family budgets and rising divorce rates have also contributed to rising labor-force participation by women.) By 1984, more than one-half of married women living with their husbands were working —a 73 percent increase since 1960.[26] And although single women are still more likely to work than are married women, the gap is smaller than it was in the years before 1960.

In addition, women's ability to have the number of children they want by a young age allows them to return to work (or begin it for the first time) confident that their childbearing is over. Between 1965 and 1973 (the latest year for which data are available), the proportion of women returning to work within two years of their final birth rose from 26 to 38 percent.[27] These data reflect increasing confidence on the part of women who say that they intend to have no more children.

Discussion

Margaret Sanger's early efforts to make contraception available grew out of her conviction that improved access would improve women's lives. We have explored this idea further, suggesting a mechanism by which improved access to near-perfect contraception improves the status of women—that is, that greater control over the timing of childbearing increases the economic returns on women's education and broadens employment options. Uncertainty over the timing of childbearing, in contrast, inhibits women's educational and occupational decisions. All things being equal, women facing such uncertainty will invest little in education and will accept jobs that have low wage returns and low entry and exit costs.

We believe that low fertility, at the societal or the individual level, is not sufficient or even necessary for improving the status of women. Rather, it is women's knowledge that they can, if they wish, control the timing of their childbearing (and society's understanding that women can do so) that enlarges women's economic choices and enhances their status. Reliable contraception in this respect marks a "revolutionary change" in women's lives; "women can, for the first time, control the timing and pattern of their work and childbearing careers with confidence."[28]

There are, of course, many factors other than access to contraception that affect the status of women. Broad social perceptions of the role of women, influenced by religious and cultural forces, still define the range of acceptable behavior for women, shaping their education and employment options. In societies that set narrow limits on women's options, practice of contraception is likely to be limited even if information about the technology and services is available. In the short run, making effective contraceptive methods available will not make them "accessible" in a cultural sense and will not in and of itself free women to engage in pursuits outside the home (although the practice of family planning can improve women's health and overall family well-being). In the long run, however, greater availability of information and services contributes to greater "access" and surely does play a part in changing both women's real options and society's perceptions of those options.

Unfortunately, our hypothesis is not susceptible to quantitative testing. Such a test would require systematic examination of differences in behavior, not across individuals, or even across aggregates of individuals within any one economic system or society, but across societies—or within one society, over an extended period of time. Since improved access to contraception (and lower fertility) is likely to result from, as well as to contribute to, improvements in the status of women, the

Schooling and Job Choice in Brazil

A study of income differences between male and female schoolteachers in Brazil illustrates how women's educational choices are influenced by their job expectations.[1] Female teachers earn about half as much as do male teachers in Brazil (1970 data). More than 60 percent of the difference is attributable to their having less schooling and experience and to their working fewer hours per week, on average. Much of the remaining difference is associated with the fact that more than 50 percent of the men, but only 10 percent of the women, teach in secondary schools, where jobs have salaries higher than can be explained simply by the higher requirements for teaching in these schools. Jobs in secondary school, in other words, have a kind of income premium.

Why are men more likely than women to hold secondary school jobs? The answer lies largely in differences in the type of education men and women obtain before they start teaching. The table below shows, for all Brazilian teachers who completed some form of secondary school, the proportion of males and females who followed the academic course, the teacher-training course, or some other kind of course. The teacher-training courses prepare secondary school graduates to teach in primary schools. In contrast to the academic and other courses, they do not prepare students for any type of postsecondary education, nor for teaching in secondary schools. A full 91 percent of females, but only 34 percent of males, had taken the teacher-training course.

Type of course	Male	Female
Academic	55	8
Teacher-training	34	91
Other	11	1
Total	100	100

The type of secondary school courses taken is a choice made by students at about age 14, so it is clear that many years before marriage and childbearing, girls are preparing themselves for typically female jobs as teachers in primary schools and are not planning to continue their education beyond secondary school. As a result, their later job choices are severely limited. As teachers, they are confined to teaching in primary school.

The Brazilian study provides evidence of one other possible cause of returns to education that are lower for women than for men. Suppose that women as a group are less mobile geographically than men[2] because they adhere to a simple family-decision rule, namely, that the wife accompanies her husband to wherever his income is maximized and does the best she can in that location. Such a rule makes sense, given that households with two workers of differing skills seek to maximize their total income, and given that, on average, men have greater potential incomes than women. This hypothesis implies that women are more likely to accept jobs for which they are overqualified, and in which, therefore, they will receive lower returns to education, experience and other characteristics than they would receive if they could move anywhere. As it turns out, between eight and 13 percent of the income difference between male and female schoolteachers in Brazil is attributable to the fact that women are—all other things being the same—less likely than men to live in regions where teachers are paid well.[3]

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problem of simultaneous effects confounds the reliability of any possible estimates made cross-sectionally. Nor should we underestimate the difficulty of defining and measuring access to near-perfect contraception.

We have little doubt, however, that other worthwhile avenues exist for research on the relationship between access to contraception and the status of women. Systematic studies, through retrospective surveys, could help to indicate whether our theory provides an adequate explanation (if not an exclusive or verifiable one) of the reasons for change in the status of American women. Other research might include historical studies of changes over time in societies, case studies of individual women and sociological investigations of attitudinal changes occurring in societies of the developing world in which access to modern contraception is now increasing.

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Sex Education and Family Planning Services For Adolescents in Foster Care

By Denise F. Polit, Cozette Morrow White and Thomas D. Morton

Summary

Representatives of public child-welfare agencies in 48 states were surveyed to determine their states' policies for meeting the sexual development and family planning needs of teenagers served by the agencies. Only nine states have a formal written policy dealing with this area of child welfare, and just two of the states have a comprehensive policy. A handful of states have deliberately avoided addressing the issue. Officials in other states believe that a formal policy would be counterproductive, arguing that a low-key approach is the best way to deal with the needs of the teenagers they serve. Finally, some state child-welfare officials admit that they have not given the issue much thought. Twenty-nine states offer foster parents special training in adolescent sexuality, and 19 offer such training to caseworkers; however, only five states mandate such training for foster parents and only four do so for caseworkers. Southern states are the most likely to have written policies, while western states are the least likely; western states also are the least likely to offer or mandate special training for caseworkers in contact with teenagers. The officials surveyed also identified a number of institutional barriers that prevent their agencies from developing and implementing policies to deal with the sexual development needs of children in state care.

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Introduction

In recent years, the proper role of the family in guiding children's sexual development has become a topic of increasing attention. The Adolescent Family Life Act, signed into law in 1981, explicitly emphasizes the importance of parental involvement in issues relating to adolescent sexuality and premarital pregnancy. For example, the act reads in part, "Prevention of adolescent sexual activity and adolescent pregnancy depends primarily upon developing strong family values and close family ties, and . . . programs designed to deal with issues of sexuality and pregnancy will be successful to the extent that such programs encourage and sustain the role of the family in dealing with adolescent sexual activity and adolescent pregnancy."[1] However, there are some circumstances in which assumptions about the ability of parents to provide guidance may be questioned, as, for instance, when it has been determined that parents are not caring for their children in accordance with society's standards.

Public child-welfare agencies in this country serve the needs of children and their families when parental functioning is impaired or when a child is not able to function in a family setting. Every year, such agencies deal with an estimated 1.8 million children—two-thirds of whom have experienced some form of parental abuse or neglect. Almost half of the children seen by these agencies are between the ages of 11 and 17. Since 48 percent of child-welfare clients are female, this means that nearly 400,000 adolescent girls are served annually by the public child-welfare system.[2]

The majority of children who enter the system are provided with a variety of in-home services designed to strengthen family functioning and keep the family unit intact. However, when this type of intervention is deemed an inadequate solution, an agency can remove a child from the parents' home and place the child in some form of alternative care, usually a foster home. In 1982, approximately 425,000 children were in foster care, and on any given day, 275,000 children were receiving such care.[3] The median age of foster children is presently 11.5 (having risen steadily since the late 1970s), and the median length of time that a child remains in foster care is 21 months.[4] Thus, a substantial and growing number of foster children will go through critical stages of their sexual development living in a setting in which they lack parental guidance.

From a public-policy perspective, children served by the child-welfare system represent a special problem. They constitute an isolated instance in which the government can intervene in or even terminate the rights of parents to raise children according to their own beliefs, values and life-styles. This power places upon the government an enormous responsibility for creating and implementing policies and practices that guarantee adequate rearing for these children. Adequate rearing includes attention to their sexual development.*

"Only nine states have formal written policies [on providing] family planning and related services to child-welfare clients. Most state contacts admitted that this issue has not received any formal attention, and that no written policy is in place."

There is suggestive evidence, although little documentation, that adolescent child-welfare clients are at higher than average risk of early unintended pregnancy. First, child-welfare clients are overrepresented among nonwhite children, children from low-income homes and children from one-parent families[5]—all groups that have been shown to have high rates of early premarital sexual activity and low rates of contraceptive use.[6] Moreover, children are often removed from the care of their natural parents because of abuse; some victims of child abuse suffer from problems often associated with young women who became pregnant at an early age, such as low self-esteem, loss of identity and low feelings of personal efficacy.[7]

Child-welfare clients may run a higher than average pregnancy risk because many of them are victims of sexual abuse. According to a recent report, about 13 percent of the children who were abused or neglected in 1984 were victims of sexual abuse.[8] (It is generally suspected that the incidence of sexual abuse is vastly underreported.) Several studies have concluded that one of the more predictable effects of child abuse on the victim is overall sexual maladjustment, sometimes expressed as promiscuous behavior.[9]

Members of the child-welfare population may face not only an especially high risk of early pregnancy, but also substantial barriers in obtaining family planning and related services. For example, children in foster care may find themselves living in a new community, where they are unfamiliar with service providers and know few people from whom they feel comfortable seeking family planning advice.

A more serious obstacle, however, is the often poorly defined role of foster parents in this area. Who should assume responsibility for the sexual development and related needs of a child in foster care—the foster parent, the caseworker from the child-welfare agency, or the school system? When the child remains in the parental home as a protective-service case,† does the social worker have a right—let alone a responsibility—to address these sensitive issues?

Foster care has traditionally been viewed as substitute parenthood, with the expectation that the surrogates will assume most parental responsibilities. However, there is reason to question whether foster parents are, in fact, fulfilling normal parental duties with regard to the child's sexual development. The only study on this topic to date focused on foster parents in Wisconsin.[10] It found that 48 percent of foster parents, 32 percent of group homes and 21 percent of child-care institutions were unsure of their legal right to provide birth control information without parental consent. Only one-fourth of the foster parents of sexually active teenagers said that they had talked directly to the children about sexual issues or had referred them to a physician or other family planning provider. In the same study, nearly two-thirds of the caseworkers surveyed reported believing that providing birth control information was the foster parents' responsibility rather than their own.

The Wisconsin study has led to some concern about the adequacy of current policies and practices of child-welfare agencies, since it seems to suggest that neither foster parents nor caseworkers are prepared or willing to take the initiative. Anecdotal information collected several years ago from child-welfare administrators suggests that few officials in positions of leadership have formally considered their responsibility to ensure that the children in their care receive adequate sexual guidance.[11]

There is no systematic information as to how child-welfare personnel view their role in addressing the sexual development needs of their clients. The purpose of this article is to provide some descriptive information about the policies and practices of child-welfare agencies in the United States and to suggest potential topics for a discussion of policy development.

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*Sexual development refers here to aspects of the adolescent's growth and development that are of a sexual nature, and encompasses the adolescent's related need for sex education, education in family life and sexual responsibility, family planning information and counseling, and pregnancy counseling.

†These are cases in which a child is left in the custody of the parents, but the child's welfare is monitored by a caseworker.

Table 1. Number of state child-welfare programs following particular policies, by region, United States, 1986

Policy	Total (N=48)	North-east* (N=9)	North Central† (N=12)	South‡ (N=16)	West§ (N=11)
Have formal written policy relating to family planning or pregnancy counseling	**9**	1	3	5	0
Offer or recommend training in adolescent sexuality and family planning to foster parents	**29**	7	6	11	5
Mandate training in adolescent sexuality and family planning for foster parents	**5**	2	1	2	0
Offer or recommend training in adolescent sexuality and family planning to agency caseworkers	**19**	4	6	8	1
Mandate training in adolescent sexuality and family planning for agency caseworkers	**4**	2	0	2	0
Maintain sexual or reproductive history in client's records	**0**	0	0	0	0

*Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island and Vermont.

†Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota and Wisconsin.

‡Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia.

§Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Methodology

In late 1985 and early 1986, we conducted a telephone survey of representatives of public child-welfare agencies in the 48 coterminous states. Before any telephone contact was made, a letter announcing the survey was sent to the director of each state's child-welfare agency. The letter asked the director to name an agency representative who could respond to questions about the state's policies on adolescent child-welfare clients and their sexual development needs. A topic guide was sent with the letter so that the director would know which data were required. We completed semistructured interviews with representatives of child-welfare agencies in all of the 48 states. In most cases, the interviewee was a senior member of the agency's policy or planning staff; in a handful of cases, however, two or more staff members were interviewed simultaneously.

The representatives were asked specific questions about state policies on the dissemination of birth control information; the provision of counseling about pregnancy options; the maintenance of records on clients' sexual activity and pregnancies; and the provision of training in adolescent sexuality for caseworkers and providers of substitute care (foster parents and various kinds of group residential homes). Respondents were also asked to discuss what they believed to be actual practice in all these areas. States with any written policies were asked to submit written materials for our review.

State Policies

Table 1 summarizes the policies of state child-welfare agencies. Because of the considerable degree of regional variation, the information in Table 1 is broken down by region. Overall, only nine states* have formal written policies dealing with the provision of family planning and related services to child-welfare clients. Most state contacts admitted that this issue has not received any formal attention, and that no written policy is in place.

Among the nine states that have written policies, most include a brief statement in their social services handbook indicating what a caseworker can or cannot do in certain circumstances. For example, in Texas, the handbook addresses the child's right to receive family planning counseling and services and offers guidelines for handling pregnancies among the child-welfare population. Caseworkers are expected to inform and refer clients, but the provision of family planning information is not monitored and has received little emphasis. Similarly, Georgia has a policy stating that the child-welfare agency should provide family planning to foster children and to child-protection cases, but this policy has been neither enforced nor given a high priority. Most of the guidelines and policies in the nine states are fairly restricted in scope. For example, New York's policy, guided by statute, specifies what a caseworker should do in cases where a client requests a referral for family planning services, but it does not discuss what should be done if a client becomes pregnant.

Only two states—Louisiana and Wisconsin—have developed comprehensive policies designed to meet the sexual development needs of the child-welfare population. Louisiana's policy was formulated during a recent revision of the state's foster-care manual; no previous manual had included any such policy. Caseworkers are directed to refer all adolescent mothers and sexually active girls to family planning agencies when they request it. Workers are expected to talk to foster parents about allowing a young woman placed in their home to use birth control. If a pregnancy occurs, the worker is instructed to help the child deal with her emotional reactions and to discuss all options except abortion. The caseworker must provide support services, including monthly visits, throughout the pregnancy. The state will neither fund nor approve an abortion, except in the case of a medical emergency, and then only with a court order. There is, however, a mechanism for the child or the foster parent to challenge the agency's position on abortion if either does not agree.

Wisconsin deals with these issues more aggressively, regarding family planning and related services as the right of each client. State contracts with group homes must specify who will provide notice of the client's right to family planning, and licensing standards for child-care institutions require some provision for sex education. All minors in alternative living arrangements of any kind are eligible to receive family planning information, and the state must help such young people obtain services. Posters displayed in agency offices remind staff of their responsibilities with regard to family planning referral. Workers are also expected to counsel clients on the pregnancy options open to them; abortion referrals may be made, but no state funds can be used for abortions.

At the opposite end of the spectrum from the nine states with formal policies are a handful of states that have declared "hands off" the entire issue. For example, in Idaho, family planning is an unpopular area for program activities, and there is general opposition in the legislature to all social service programs. A representative of another state reported that foster parents there would mostly "be horrified at the thought of having any responsibility in the area of sexual development." In a third state, the contact said that "some of our social workers won't say the work S-E-X."

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*Arkansas, Georgia, Illinois, Louisiana, New York, Ohio, Texas, Virginia and Wisconsin. Several other states have a general policy on family planning, but it does not refer specifically to child-welfare clients.

Policy-makers in several states believe that a low-key approach is the best way to serve the sexual development needs of child-welfare clients, so they have chosen to maintain flexibility by having no formal policy. Sources in these states generally believe that the needs of the children are being met through "good social work practice," that nothing would be gained by attempting to draft a policy, and that to insist on a policy would be to risk their entire program. Several respondents expressed concern that by calling attention to the issue through the introduction of a formal policy, caseworkers' options would be restricted, not enlarged.

Finally, respondents in other states admitted that they simply had not given the issue much thought before participating in the survey and were unsure exactly what caseworkers did in the field. Indeed, several respondents said that they hoped to address the issues called to their attention by our survey.* Some asked for contacts in states where formal policies were in place.

Respondents were also asked whether special training in the area of adolescent sexuality was either available to or mandated for caseworkers and foster parents in those states. As Table 1 shows, 29 states† report either that training is available to foster parents or that it is recommended by the agency. However, even in the states where training is available, there is no guarantee that all foster parents will be able to obtain it. In general, foster parents living in urban areas are more likely than those living in rural areas to have access to training in adolescent sexuality. Only five states—Arkansas, New Hampshire, North Dakota, Rhode Island and West Virginia—require foster parents to obtain such training.

Training for caseworkers is not commonly available. Only 19 states‡ offer it to caseworkers, and only four mandate it—Arkansas, Georgia, Maine and Rhode Island. Although Wisconsin does not formally mandate special training, each year the state must offer instruction on sexual development topics to all child-welfare staff and foster parents.

None of the states maintain in their case-management records any data about a child-welfare client's sexual activity, pregnancy history or outcome, or use of family planning and related services. Consequently, it is impossible to know to what extent the child-welfare population is, in fact, in need of family planning and pregnancy-related services, and to what extent such needs are being met.§

Table 1 shows some regional differences that we did not anticipate at the outset of this study. Southern states are especially likely to have a formal written policy on the family planning needs of child-welfare clients. The southern states are also overrepresented among those states that make available or mandate instruction on sexual development for providers of substitute care and agency caseworkers. States in the western region, by contrast, are underrepresented on every indicator considered.

We also examined the relationship between a state's policies and training practices and the way child-welfare services are administered in the state. In 31 states, public child-welfare programs are administered by the state, and all public child-welfare caseworkers are state employees. In the remaining 17, public child-welfare services are administered by the counties, although the state agency plays a supervisory role. We had expected to find that statewide policies on the family planning needs of child-welfare clients would have been developed and implemented more easily in a state-administered system than in one where localities are more autonomous, but that did not prove to be the case: Policies are just as likely to have been developed in county-administered programs. (Wisconsin's public child-welfare program, for example, is administered by the counties.)

It became clear from the survey results that almost all states conceive of their role in this area as a reactive one. That is, the agency representatives almost invariably believed that the state was permitted to play a role (either through policy directives or through individual caseworker initiative) only after the agency had determined that the adolescent was sexually active, and in many cases only when the client had asked for information about family planning. The survey respondents almost never raised the issue of prevention. Furthermore, they almost invariably considered girls to be the more appropriate recipients of counseling or referral. Only one agency representative discussed the sexual development needs of male child-welfare clients.

The contact from Tennessee was the only state representative to mention a preventive program specifically targeted at the child-welfare population. The Tennessee Healthy Child Initiative is a major effort begun by the current state governor, and a model program known as the Memphis Project has been undertaken as part of that initiative. The project, which was launched in the summer of 1986, was designed to ensure that children aged 10 or above who are in foster care are provided with family life education. Foster children and their social workers attend the family life program together and have opportunities to discuss issues of mutual concern.

Barriers to Policy Development

We also asked respondents to discuss what barriers, if any, interfered with the development and successful implementation of policies addressing the sexual development and family planning needs of children served by child-welfare agencies. The most frequently cited obstacle was political opposition, mentioned by 54 percent of the contacts. Even though southern states were the most likely to have formal policies, representatives of those states were especially likely to mention political barriers.

Respondents saw the development of policy directives as politically problematic for two broad reasons. First, the whole issue of family planning is a sensitive one in many states, and opponents often link family planning and sex education with abortion. One respondent commented that his department once had nearly lost its entire budget because its programs had come to be closely associated in the mind of the public with family planning. Several respondents mentioned that their state legislatures looked with suspicion or hostility on any issue that the public could regard as being connected with abortion.

Second, the issue of the rights of families is politically controversial. Several respondents referred to the existence of active family rights groups that interpret all acts of public agencies in the area of childrearing as interference in matters more appropriately left to the family. The prevailing view in states where there are strong family rights sentiments is that parents should retain the right to teach their children about moral issues, even when the parents' care has been found to be so inadequate that their children are removed from the home.

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*The Children's Defense Fund initiated a survey on similar themes about a month after we began our study, and there was some overlap in the scheduling of interviews. The coincidence of the two sets of interviews on the same topic undoubtedly influenced some policy-makers to believe that they should review present state policies.

†Alabama, Arizona, Arkansas, California, Delaware, Florida, Georgia, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, North Dakota, Oregon, Rhode Island, South Carolina, Texas, Vermont, Virginia, Washington, West Virginia and Wisconsin.

‡Alabama, Arkansas, Delaware, Florida, Georgia, Illinois, Kentucky, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, New York, North Dakota, Rhode Island, South Carolina, Virginia and Wisconsin.

§We are now collecting the necessary data from child-welfare clients in Missouri, among whom rates of sexual activity, premarital pregnancy and family planning practices will be contrasted with rates found in a national sample.

About 10 percent of the respondents mentioned legal constraints, and here, too, the issue of parental rights was an important factor. Thirteen states* require parental consent or notification before an adolescent can obtain an abortion, and one state (Utah) specifies that parents of adolescents seeking family planning services be notified as well.[12] In some places, the state's right to act in loco parentis when a child has been removed from the home is ambiguous. In states where there is no legal mandate for consent or notification, the child-welfare agency as a matter of policy keeps parents closely involved in all decisions about a child, even when the state retains custody. In South Carolina, for example, parental rights concerning the child's access to family planning services remain intact, even when the child is in the care and custody of a public agency. Thus, decisions about the use of birth control and about medical treatment are left to the parents. A policy pending in Nebraska has given rise to some questions currently under investigation by the child-welfare agency's legal staff; in its current draft, the policy states that family planning services should be provided in accord with the beliefs of the child and the parents. If, however, the child and the parents do not hold the same beliefs, it is unclear what the agency can do.

Finally, some barriers that are primarily administrative were uncovered. Many respondents cited funding constraints as an impediment to further activity. For example, several mentioned the enormous burden that large caseloads already impose on individual social workers. Some states have client-staff ratios in the vicinity of 50-to-1 or more, the respondents noted, asserting that the ability of caseworkers to perform even basic child-protection functions has been stretched too thin. Even if a policy to address the sexual development needs of child-welfare clients were in place, these contacts argued, it would be virtually impossible to carry out such a policy because of personnel shortages. Recent cutbacks in federal funding were also cited as an impediment to the development of adequate training programs for caseworkers and foster parents.

On the other hand, several people indicated that no real obstacles block the introduction of explicit policies in their states. Formal policies have never been formulated in such states simply because the issue has never been raised or no one has taken the initiative to draft a policy statement.

Several of the respondents who did cite the existence of barriers believed that either legislative or administrative action was inevitable. They argued that the formulation of policy directives in this area will occur in part because of a broad interest in preventing adolescent pregnancy and childbearing, but also partly because of increasing concern in some states (Maine, Maryland and West Virginia, for example) over the growing proportion of adolescents within the child-welfare population. Furthermore, the increasing number of sexually abused teenagers entering the child-welfare system has fueled a growing demand for policies regarding issues of sexuality.

Some sources thought that these issues would have to be handled as policy matters in the future in response to an increasing number of lawsuits by natural parents whose children are in the care and custody of the state. For example, in Wisconsin, as a result of legislation that makes parents financially liable for the cost of raising the offspring of their minor children,[13] the natural parents of an adolescent girl have filed suit against the child's foster parents because she became pregnant while living in the latter's home. The issue of the liability of foster parents has already become a difficult one and may provide an impetus for some policy changes in this whole area.

The general sentiment among the state officials who were contacted seems to be that more should be done to address the sexual development needs of children in the public child-welfare system. While many expressed the belief (and the hope) that social workers were handling sexual issues in the course of their normal casework, the majority admitted that they did not know what was actually being done in the field. There is some indication that the needs of many children are going unmet because everyone believes that someone else is taking the responsibility for the child's family life education.

Discussion

The data from this study suggest that most public child-welfare agencies have not developed substantive policies to meet the needs of clients in the areas of sex education and pregnancy prevention. We do not know whether the needs of these children are greater than those of adolescents in the general population, but there is reason to suspect that such is the case. There is also reason to believe that these children's parents have not given them adequate guidance in the area of sexual conduct.

Only nine states can be described as having a formal policy, and in most cases the policy is neither comprehensive nor given a high priority. Only one state—Wisconsin—sees its role as that of aggressively ensuring the child-welfare clients' right to family planning and pregnancy counseling. But even in Wisconsin, the broader issue of helping all adolescents who are in the state's care or custody to learn about sexual responsibility and family life has been only partially addressed: Boys in foster care have received virtually no attention. Furthermore, almost all of the states' policies have focused on foster children rather than on children who remain in their homes but are receiving some help from child-welfare caseworkers.

In some states, the absence of a state policy is viewed as beneficial rather than detrimental, because it allows caseworkers more flexibility in the kinds of referrals and counseling that they can provide to their child-welfare clients. However, without any formal guidelines, the actions of individual caseworkers can be expected to vary considerably. Undoubtedly, there are many social workers who are dealing effectively with the needs of their clients even in the absence of a policy, but other caseworkers reportedly are afraid to even say the word "sex" and cannot be expected to communicate effectively with their clients or with foster parents about sexuality. Similarly, while a number of group residential homes for adolescents undoubtedly have formal policies on sexuality and pregnancy, variability is likely to be considerable. Moreover, state agencies rarely know whether group facilities have such policies and, if they do, what those policies are.

Given the political realities with which child-welfare agencies must contend, it would be difficult to argue that every state should have a formal policy addressing the sexual development needs of clients. However, it is safe to say that almost every state could benefit from greater scrutiny of its policies and practices. Often, improvements could be made in practice without making formal legislative changes. In fact, the written policy in most states that have one reflects administrative rather than legislative action. Frequently, administrative change has come about as the result of the conviction of a single person within the agency that guidelines ought to be developed to assist caseworkers, as was the case in Louisiana.

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*Indiana, Louisiana, Massachusetts, Missouri, North Carolina, Rhode Island, South Carolina and Utah require parental consent before a minor may obtain an abortion. (South Carolina's law covers only unmarried minors 16 or younger, and Utah's refers only to publicly funded abortions.) Arizona, Idaho, Maryland, Montana, Utah and West Virginia require notification of the parents of a teenager seeking an abortion.

While policy development may be politically controversial, there are other activities that are less sensitive and merit some attention. It is rather disturbing, for example, that no state could provide information about the number of foster children who had become pregnant while in the state's custody. Maintaining better, more centralized records on the incidence and outcomes of pregnancies might provide a good basis for determining the need for an explicit policy.

Providing training and education is also unlikely to create political controversy. Many foster parents and caseworkers, like many other adults, undoubtedly feel uncertain about how best to address sex-related topics with teenagers. Furthermore, their duties place extraordinary demands on both social workers and foster parents: They must deal with a large number of children, and they generally have not had the benefit of years of ongoing contact with an individual child, during which they could have fostered positive values or imparted information. In many cases, foster parents and caseworkers may be dealing with children who are confused sexually because of past sexual abuse or exploitation. Thus, routinely raising sex-related issues with child-welfare workers and providing training or appropriate written material would seem to be positive first steps.

The results of this study raise questions about not only what steps should be taken to improve the current system but also who should take them. Traditionally, family planning agencies and advocacy groups have not targeted child-welfare clients for services, and child-welfare agencies have not thought of family life education and family planning as priority services to offer their clients. As in other types of service provision, collaboration and coordination among providers will probably be difficult.

However, it seems unlikely to us that the impetus for change will come from within the child-welfare community, not because its members are unconcerned about these issues, but because social workers already have too much to do. The main responsibility of child-welfare caseworkers is to protect their clients from potentially dangerous home situations and devise some permanent childrearing arrangement. Social workers and foster parents must be concerned with a child's overall development, but this very broad mandate encompasses intellectual, social, emotional, academic and vocational development, as well as sexual development. Unless the social worker's caseload is small, it may be too much to expect that he or she will attend to a child's special sex-related needs until it becomes clear that the young person is already sexually active or pregnant. At the policy level, there is likely to be more pressure to prepare foster children for economic self-sufficiency by age 18 than to foster their sexual responsibility.

The family planning community could play an important role by collaborating with and assisting child-welfare agencies in responding to this dilemma. There is evidence that this is happening in several states, such as California. Family planning providers and advocacy groups could help focus attention on the issue; several respondents mentioned that just such a catalyst is missing. Family planning advocacy groups could, for example, work with child-welfare agencies to develop training materials for foster parents and caseworkers, provide training sessions, create communication programs for foster parents and children analogous to the parent-child programs currently offered in many communities, develop resource materials on family life education and family planning services for distribution to child-welfare workers, and prepare guidelines to help caseworkers address the sexual development needs of their clients. They might also advocate regulations or laws that would encourage caseworkers to assume a more active role, and they might scrutinize the state's methods of paying for medical services, of making services available to Medicaid-eligible child-welfare clients and of screening prospective foster parents with regard to their attitudes toward the handling of sex-related issues.

Activity in these areas is compatible with the general aims of family planning providers. Child-welfare clients constitute a population of concern not only because they are presumed to be at high risk and therefore in need of special targeting, but also because circumstances may result in their having unequal access to family planning services. Foster children need to learn, as do many children raised by their natural parents, how to handle their sexual lives responsibly. Given that the representatives of the state child-welfare agencies contacted may have been sensitized to these issues by our survey and that the majority expressed some interest in giving these topics further thought, the time would appear to be right for the family planning community also to become involved in this area.

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DIGEST

American Fertility Society's Ethics Panel Examines Ethical Status of New Reproductive Technologies

Some of the technological advances that are allowing couples to reproduce without coitus—among them, artificial insemination, in vitro fertilization and cryogenic storage of semen—are ethically acceptable under most conditions. Other new technologies or practices—such as the freezing of preembryos* and the use of surrogate mothers—must be investigated further before they can be considered ethical for general use. These are the major conclusions of a special committee appointed by the American Fertility Society (AFS) to assess the ethical, moral and legal ramifications of a wide range of new reproductive technologies.[1]

The 11 members of the committee,† appointed in 1984, met eight times in the following 18 months to discuss and complete each chapter of their report. The committee members note that they were guided in their deliberations by the concept that actions "undermin[ing] the human person . . . are morally wrong. Actions that are judged to be promotive and supportive of the human person in his or her essential dimensions are morally right."

Recognizing that both moral ambiguity and respect for pluralism require that ethical evaluations be made cautiously and with an open mind, the group contends that "a moral 'yes' or 'no' is not always an absolute. [It] may represent only a pause on a path toward a consensus that has not yet been clearly spelled out." Their report, the committee members state, represents an attempt to move toward such a consensus.

Legal and Moral Concerns

Legal assessment of the new reproductive technologies has lagged somewhat in the United States, the committee claims. Part of the reason is that while the Supreme Court has established that couples have a constitutional right not to reproduce, the constitutional right *to* reproduce, regardless of the means, has never been formulated. However, the committee asserts that individual decision-making in this area would almost certainly be protected by the right to privacy, especially considering that in the United States, "a couple's right to bear and beget children is fiercely protected legally, as well as morally."

Much of the legal and moral uncertainty concerning the new reproductive techniques arises from the status of the preembryo. A fertilized ovum is not protected by homicide laws or wrongful death laws; however, the committee asserts, there is a consensus that the preembryo should be treated with special respect because of its potential for development into a human being. It is not clear how far such special respect should be carried, the committee adds, especially in the application of such techniques as in vitro fertilization, in which several preembryos may develop but only one is transferred to the woman's uterus. The disposal of "extra" preembryos remains a difficult problem.

Since 1973, 25 states have enacted laws governing fetal research; these range from mildly to highly restrictive. Some of the statutes apply only to research on aborted fetuses, so they do not affect the use of new techniques like in vitro fertilization. Laws in six states, however, specifically regulate research involving embryos, and those in another six restrict research at any point following conception. Thus, some statutes could be used to prohibit the practice of in vitro fertilization. Two states—Minnesota and New Mexico—specifically cite in vitro fertilization in their fetal research statutes; however, since language elsewhere in those statutes notes that their restrictions are limited to fetuses showing one or more vital signs, procedures involving preembryos would seem to be unaffected.

Another area of some uncertainty involves the relationship of other parties to the preembryo. Most laws consider the woman who carries a pregnancy to term to be the child's mother; the difficulty arising from that interpretation can be seen in custody battles involving a surrogate mother who will not relinquish the newborn. Because the law does not recognize the paternity of a semen donor, a couple may have no legal claim on a child borne by a surrogate mother. Also, in some states the use of surrogate mothers may be construed as illegal baby-selling.

In Vitro Fertilization

The first successful birth following in vitro fertilization occurred in 1978, but it is only in the past few years that the practice has become more common. As practitioners have gained more experience with the technique, success rates have risen; the chance of a birth following in vitro fertilization now stands at around 25 percent, according to the committee. There now are thousands of children around the world who were conceived outside of their mothers' bodies.

There is unanimous agreement among the committee members that "basic in vitro fertilization is ethically acceptable" in cases of intractable infertility. The members agree that the procedure is not known to place the embryo at any greater risk of genetic damage or deformity; neither does it appear to place the parents at any increased risk of harm. The committee disposes of most of the major objections that have been raised, noting that the argument against separating life-giving from lovemaking is "built on an excessively biologic notion of what is morally right and wrong." The group concludes that the potential for abuse warrants caution but does not invalidate the use of in vitro fertilization in appropriate cases.

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*The term used by the American Fertility Society and others to designate the conceptus from the point of conception until the appearance of the embryonic axis (generally considered to be about 14 days after conception).

†In addition to its chairman, obstetrician-gynecologist Howard W. Jones, Jr., the committee consisted of obstetrician-gynecologists Celso-Ramon Garcia, Richard Marrs and Edward E. Wallach, attorneys Lori B. Andrews and John Robertson, biologists Clifford Grobstein and Gary D. Hodgen, theologian Richard A. McCormick, endocrinologist C. Alvin Paulsen and ethicist LeRoy Walters.

Donation of Gametes and Preembryos

According to the committee, artificial insemination—either with a woman's husband's semen or with donated semen—is usually ethically acceptable. Only in applications where little is known about the success rate (as in sex selection) should the use of the husband's semen be considered experimental and thus not acceptable for general use. Artificial insemination using donor semen can present greater ethical problems because of the potential for such outcomes as psychological distress for the parents or child; transmission of serious genetic or infectious diseases; and consanguinity. The committee members point out that in individual cases, the ethical reservations may outweigh the putative benefits. They urge that couples relying on this technique be thoroughly counseled, that semen donors receive no payment, that the same source of semen be used for no more than 10 successful inseminations and that donors be subjected to rigorous genetic and health tests.

Donated semen may also be used for in vitro fertilization, although such use will probably occur in only a small proportion of cases. For example, a couple may rely on this technique if the woman cannot conceive normally *and* her partner produces sperm lacking penetrating capability. If the inseminating ability of the partner's sperm is either borderline or unknown, donated semen can be used as a back-up measure to increase the chances of fertilization in the short period during which fertilization is possible. In this case, the partner's semen is introduced, and if fertilization appears not to have occurred after a certain period of time, the donor sperm are introduced. The most serious ethical complication here, the committee believes, is that of paternity: If the egg is fertilized by the partner's sperm around the time at which the physician introduces the donated semen, the couple will be confused about the genetic paternity of the child. Furthermore, if the egg is fully ripe at the time of the first insemination, it may be overripe by the time of the second insemination, which could cause an increased risk of genetic mutation. The committee concludes that such use of donated semen is ethically acceptable only if the couple have been properly counseled and if repeated attempts using the partner's semen have been unsuccessful.

The use of donated eggs for in vitro fertilization is unlikely, but may be necessary if a woman's ovaries have been removed or have failed, or if it is impossible to collect eggs from them. Reviewing a number of potential objections to this technique, the committee finds that some are baseless: The courts will most likely treat egg donors as they do sperm donors—as having no legal claim on the child—and consider the gestational mother as the legal mother. Unwitting consanguinity is unlikely, considering the relatively small number of eggs that can be removed. Finally, concerns that a "foreign" egg might be rejected by a woman's immune system are purely speculative.

However, the committee does identify some areas of serious ethical conflict. Most important, because the collection of eggs from a woman's ovary is a surgical procedure, a donor may be putting herself at greater medical risk than does the woman who is to carry the pregnancy to term. The members suggest that the most ethically acceptable source of donated eggs may be women already participating in an in vitro fertilization program. Given the possibility that genetic mutation increases in older women, the committee urges that only young women be considered as donors, but that physicians should make every effort to ensure that a young donor's ability to conceive is not diminished as a result. The ethics committee concludes that the donation of eggs would be acceptable in some cases if the above stipulations were observed and if the donor were given no compensation, but that even then the risk to the donor might outweigh any benefits of the practice.

Another uncommon procedure is the donation of a preembryo; at present, no information exists on whether that procedure has ever been attempted. However, since in vitro fertilization procedures often produce more preembryos than necessary, an instance of such donation could arise. The committee suggests that while it is not completely accurate to liken the donation of a preembryo to a prenatal adoption, the two are similar enough that donation would be ethically acceptable.

Storage of Gametes and Preembryos

The cryopreservation (or freezing) of semen is not a new technique, and the committee members conclude that its benefits outweigh its risks. However, they also recommend that the AFS work toward establishing a uniform set of standards for all sperm banks, to minimize the risk of damage to the sperm. A comparable method for storing eggs has proved difficult to develop. The committee concludes that "without good evidence of the potential safety of the procedure in animals and humans, the cryopreservation of eggs for clinical use is of grave concern" and is not ethical.

Success rates for in vitro fertilization can be increased if extra preembryos produced by the procedure can be frozen and used in later cycles. In addition, the cryopreservation of a preembryo for a short period of time can allow the physician to check its genotype to be sure there are no genetic problems. The committee notes with concern, however, that only between 50 and 60 percent of frozen preembryos regain viability after thawing, and that the risk of injury to such preembryos is unknown. (No one knows whether the viability rate of frozen preembryos is any lower than the overall viability rate of preembryos conceived in vitro.) Furthermore, committee members comment that the "mechanization and manipulation of the reproductive process raises many issues from a moral standpoint when human life forms are placed in a suspended state of deep freeze."

According to the committee report, the few children who have been born following the freezing and subsequent thawing of preembryos have all been normal. Further research is urged, especially in making the mechanical process of freezing as safe as possible; in addition, the report points out that preembryos should not be kept frozen so long that they could be transferred from one generation to the next. Because of the problems surrounding cryopreservation of preembryos, its risks and benefits cannot be adequately assessed; thus, the committee finds that "a general clinical application of freezing human preembryos is inappropriate," at least at present.

Surrogacy

The committee identifies and evaluates three ways in which other women can serve as surrogates for an infertile woman. The first is a little-used technique in which the surrogate is inseminated (with sperm either from the infertile woman's partner or from a donor), and five to six days later, the preembryo is transferred to the uterus of the infertile woman. The members of the committee cite a number of potential problems with this technique, among them, the risk of infection of either the surrogate or the infertile woman and the risk of an ectopic pregnancy in the surrogate. Consequently, the committee recommends that such a procedure be used only as a clinical experiment.

The second way was perfected early in 1986, when the first successful use of a surrogate gestational mother was reported. A preembryo was conceived in vitro, but rather than being implanted in the uterus of the woman who supplied the egg, it was placed in the uterus of a surrogate for gestation. The committee believes that this procedure, which probably would be used only rarely, could be ethically carried out as a clinical experiment, at least initially, provided that there were serious medical reasons why the donor could not carry a pregnancy to term.

The third, and most common, form of surrogacy—known simply as surrogate motherhood—is a method in which the surrogate both supplies the egg and carries the pregnancy to term. The surrogate mother then turns the child over to the contracting couple. The committee members express a number of reservations about this procedure, including concern over the potential for physical or psychological harm to the surrogate or child, the possibility that people will become surrogates for financial reasons and the legal complications that can arise from the practice.

The report notes that the committee members were "dismayed by the scarcity of empiric evidence about how the surrogacy process works and how it affects those involved." The committee does not recommend the use of surrogate motherhood for nonmedical reasons, and concludes that the procedure should not receive widespread clinical application. Indeed, the members argue, surrogate motherhood "would seem to be more problematic than most of the other reproductive technologies discussed in this report." While there is not enough evidence to recommend outlawing the practice, the committee notes, there also is not enough information to allay the group's serious ethical reservations. Thus, the members urge that the practice be continued only as a clinical experiment: All parties involved should be counseled intensively and should give their informed consent; professionals should receive no more than their customary fees.

The committee ends its report by recommending that several of the new reproductive technologies undergo more experimental testing before they are considered for general clinical use. The members also suggest that in concert with other professional groups, the AFS launch a national effort to assess the implications of the new reproductive technologies and to promote public understanding of those procedures.

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Private Doctors May Perform Cesarean Sections More Readily Than Their Hospital Counterparts

Private physicians appear to be more likely than hospital staff members to deliver babies by cesarean section. According to an analysis of more than 65,000 births occurring in four New York hospitals, private patients are more likely to have cesarean deliveries than are clinic patients, who are cared for by hospital staff physicians, even though private patients are generally healthier than clinic patients and experience fewer serious medical complications. The investigators observe that despite the higher incidence of cesarean delivery among private patients, the babies born to these women seem to be no healthier than those born to clinic patients. They conclude that the greater tendency of private physicians to perform cesarean sections does not significantly improve perinatal outcome for the infants in most birth weight categories.[1]

By 1985, about 23 percent of all deliveries in the United States were performed by cesarean section, a reflection of the long-term trend toward increasing reliance on surgical delivery.[2] Although many explanations for this trend have been suggested, little is known about the role played by physicians themselves in contributing to the rising level of cesarean deliveries. The New York study examined birth records from four Brooklyn hospitals in which 65,647 babies were born between 1977 and 1982. Women were classified as private patients if they delivered at one of the hospitals but received prenatal and intrapartum care from a private physician; they were considered to be clinic patients if they were cared for during their pregnancy and at childbirth by the hospital's own staff physicians.

Findings

The investigators found that clinic patients were twice as likely as private patients to be nonwhite (48 percent vs. 22 percent), and were substantially more likely to be teenagers. Clinic patients also were somewhat more likely to have serious medical problems, such as hypertension, diabetes and anemia. Private patients having their first child were less likely than comparable clinic patients to experience difficult labor (known medically as dystocia) or to have a malpositioned fetus; they were more likely, on the other hand, to have fetal distress diagnosed. Among women who had had a previous birth, private patients were significantly more likely than clinic patients to have already undergone cesarean delivery, and were less likely to have fetal distress or malpresentation diagnosed.

Overall, 21 percent of private patients and 17 percent of clinic patients had a cesarean delivery. When the data were adjusted to account for differences between the two groups in birth weights and for other potential biases, private patients were found to be 1.32 times more likely than clinic patients to have a cesarean section (significant at $p<0.001$). The odds ratio (OR) among private patients was elevated both for primary (1.25) and for repeat (1.34) cesareans. The likelihood of a cesarean delivery was also substantially higher among private patients who were having a second or higher order birth (OR=1.44).

Among women giving birth to their first child, private patients were more than twice as likely as clinic patients to have a cesarean because of difficult labor (OR=2.23); the odds ratios were 1.96 and 3.01 for cesarean delivery due to fetal distress and to malposition, respectively.

The investigators observe that although they were able to control for the confounding effects of several characteristics, there may have been other differences between private and clinic patients of which they were unaware. Therefore, they selected from both groups women who would be considered to be at very low risk of needing a cesarean delivery—those with a singleton birth, no medical complications, no prior uterine surgery and no fetal malposition or distress. Within each parity grouping, the investigators controlled for the effects of age and birth weight. They once again found that both among those who had never had a baby and among those with a previous birth, private patients were significantly more likely than clinic patients to have a cesarean delivery. Furthermore, this relationship was observed at each of the four hospitals and in every parity group.

Since protection of the infant's health is a common rationale for cesarean section, one might expect that the babies born to private patients would be healthier than those born to clinic patients. However, the investigators discovered that the infants of private patients were significantly more likely than the infants of clinic patients to have low Apgar scores or birth injuries (OR=1.28). Although the children of private patients were less likely to die than were those of clinic patients, this differential was noted primarily among infants weighing less than 2,000 g at birth.

The investigators comment that their findings almost certainly reflect "a difference in the care of patients in certain diagnostic categories, rather than a difference in the frequency with which these diagnoses are made." For example, private patients with a fetus in the breech position were significantly more likely to have a cesarean delivery than were comparable clinic patients. Furthermore, while the house physicians who treated the clinic patients were more likely than private doctors to diagnose difficult labor, private doctors were significantly more likely to call for a cesarean delivery once the diagnosis was made.

The researchers suggest that one reason for these differences between private physicians and house physicians is that the latter were probably fairly young and recently trained; as a result, they may have been more familiar with newer obstetric techniques, such as fetal-scalp pH sampling, that permit a physician to wait longer before ordering a cesarean section. In cases of difficult labor, more recently trained physicians may be more willing to allow labor to progress. On the other hand, private physicians had higher levels of cesarean delivery in breech presentations, even though they were older and were probably more experienced than house physicians in techniques of vaginal delivery for fetuses in the breech position.

However, the investigators note that the rate of cesarean deliveries was also elevated among women who were viewed as low-risk patients, in which case the use of newer medical techniques would not be expected to have exerted as great an influence. The researchers suggest that private physicians may have tighter schedules and may be unable or unwilling to spend as much time at the hospital as staff physicians. They may also be more concerned about liability if they do not perform a cesarean and the infant's health is compromised. One possible solution to the rise in cesareans, the researchers conclude, is improved continuing medical education and provision of training in legal medicine.

However, an editorial by a Boston obstetrician that accompanied the analysis disputes some of these conclusions.[3] He claims that the investigators' implication that unnecessary cesarean sections are being performed is exaggerated, and that obstetricians perform these procedures "mainly because they believe that they are acting in the best interests of their patients." While the commentator recommends that physicians perform cesarean deliveries only after obtaining a second opinion, he warns that "we cannot assume [that such efforts] will have much overall influence on the currently high rates of cesarean section." According to the editorial, rates of surgical delivery might be reduced if there were better tools for assessing the health of the fetus during labor and delivery.

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Few Italian Women Use Modern Contraceptives; Abortion Is Widespread

Italian women want and have small families, but only a small proportion of them use a modern method of contraception, and about one-third use no method at all. Many unintended pregnancies are terminated by induced abortion, which, although legal, is often performed illegally (i.e., outside of the state health care system). These are the major findings of a report, based on several surveys of Italian attitudes and behavior, that was presented at a recent meeting of European demographers.[1]

Italy's 1983 total fertility rate of 1.5 children per woman is among the lowest in the world. A majority of Italian women say they want two children, and in recent years, couples have tended to postpone the birth of their first child and to space their births more widely. Analysis of vital statistics indicates that fewer than eight percent of all births are of an order higher than three; more than half of all couples are childless after two years of marriage; and couples wait an average of five years after the birth of their first child to have another child.

According to a 1984 fertility survey, approximately 30 percent of Italian women do not practice contraception at all, and among those who do, withdrawal and condoms are the most popular methods. However, the choice of a method varies with such characteristics as the woman's age, level of education, religiousness and frequency of sexual relations. For example, women over the age of 40, housewives, those with three or more children and regular churchgoers favor withdrawal. Women with 12 or more years of education are about three times more likely to take the pill than are those with 7–8 years of schooling. And IUD use is more common among working women with high levels of education and high incomes.

Although the proportion of Italian women who rely on modern methods appears to be growing, use of the pill or the IUD is still limited. The 1979 World Fertility Survey found that 14 percent of married women regularly took the pill, two percent relied on an IUD or the diaphragm, and the rest relied on withdrawal (36 percent), condoms (13 percent), the rhythm method (nine percent) or other methods (four percent); 22 percent did not use any method. A 1981 survey of women university students aged 21–30 found that 64 percent of respondents had taken the pill at some time, but that 45 percent had used and still regularly practiced withdrawal. Another survey, conducted in 1983 among women who were visiting a family planning center for the first time, found that only 15 percent were using the pill, the diaphragm or an IUD, and 65 percent were practicing withdrawal or were using no method at all.

A 1975 law authorized the establishment of free family advice centers throughout Italy to provide family planning services and to grant certificates authorizing abortion. However, regional variations in the availability of such services persist: They are concentrated in the northern and central regions and are relatively rare in the south, where local political support for family planning efforts has traditionally been weak and many doctors refuse to provide abortion services on religious or ethical grounds.

In 1983, 381 legal abortions were performed for every 1,000 births in Italy. The typical candidate for a legal abortion is an educated married woman aged 25–30. Minors, who must obtain parental consent or the authorization of a judge before they can undergo the procedure, account for only about three percent of all legal abortions.

It is estimated that 100,000–190,000 abortions are performed outside the state health care system every year. About 70 percent of these illegal abortions are carried out in the south. Most Italian researchers believe that the rate of illegal abortion among teenagers is much higher than the legal rate (which is about seven per 1,000 women aged 15–19), although precise figures are unavailable.

Attitudes toward contraception and abortion are greatly influenced by Catholic teaching, which condemns both practices. According to the researchers, the traditional view that sexual activity is for the "sole aim of procreation" persists, particularly in southern Italy and among low-income groups. To support this contention, they cite a 1984 study revealing that more than 70 percent of men and women disapprove of birth control, except when it is practiced for reasons of ill health or lack of money. However, the investigators note, the level of abortion use suggests that this one-time procedure may provoke less guilt among practicing Catholics than does the regular use of a contraceptive method.

The researchers conclude that it will take a long time for Italians to change their attitudes toward contraception and abortion. They suggest that schools establish sex education programs that include information on birth control; that the mass media be used to educate the public about contraceptive methods; and that state-supported family advice centers provide a broader range of services, in particular to adolescents.

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New Study Questions Convergence of U.S. Fertility Differentials

Overall fertility has declined substantially in the United States over the past 20 years, but differences in levels of childbearing persist between some segments of the populace. For example, women who never graduated from high school still bear more children, on average, than do those who finished college; likewise, women who had their first child when they were in their teens still go on to have larger families than do women who waited until their mid-20s to give birth. However, there are signs that the fertility expectations of women in many of these subgroups are becoming more uniform. Thus, according to a recent analysis by two demographers, the issue of whether long-standing fertility differentials will disappear depends largely on whether young women who have already had as many children as they planned can avoid having unplanned births and whether those who have not yet met their fertility expectations will have more children.[1]

Previous research showed that certain subgroups of U.S. women were having more children than others, but that these differentials appeared to be shrinking and might eventually disappear.[2] The demographers who performed the more recent analysis examined data from 20,621 ever-married women aged 25–44 who were interviewed for the June 1980 Current Population Survey (CPS), to determine whether fertility rates were still converging and whether they would be likely to continue to do so in the future. The survey respondents had been asked how many children they had and how many more they wanted; the researchers then combined the answers to the two questions to produce a measure they called expected completed fertility. (Women 40–44 years of age were not asked about future births, since very few were expected to be planning to have any more children.)

The CPS data show that in 1980, white women 25–29 years of age had had an average of 1.3 children, while those aged 40–44 had had almost 3.0 children. The fertility of black women in these age-groups was higher: The 25–29-year-olds had had an average of 1.9 children, while the 40–44-year-olds had had 4.3. As can be seen, the fertility differential between blacks and whites was substantially greater among the older women than among the younger. There was less variation between blacks and whites in the total number of children they expected to have, in every age-group. For example, white 25–29-year-olds expected to have 2.1 children and black 25–29-year-olds expected 2.4; among 35–39-year-olds, whites and blacks anticipated having 2.4 and 3.2 children, respectively. Overall, few 35–39-year-olds planned to have any more children; blacks and whites in this age-group each had achieved 98 percent of their anticipated fertility. In contrast, white and black 25–29-year-olds had had only 65 and 79 percent of their expected number of children.

Family income had a strong negative impact on a woman's current fertility and on her expected family size. For example, among white 25–29-year-olds, current fertility declined from 1.7 births among women with an annual family income of less than $7,500 to an average of 1.0 among those with a family income of $25,000 or more. Among black 25–29-year-olds, fertility fell from 2.4 births for those in the lowest income bracket to 1.5 for women in the highest income range. These differences could be clearly seen in every age-group, which suggests that there has been very little change over time in the impact of income on fertility differentials.

There were some signs, however, that income-related differences in expected fertility had declined in recent years. For example, black 35–39-year-olds who had annual family incomes of at least $25,000 and those who had incomes between $7,500 and $15,000 expected to have somewhat larger families than did comparable whites; among 25–29-year-olds in these income groups, however, racial differences in expected completed family size had almost disappeared.

Among highly educated women, few differences in fertility or fertility expectations could be discerned between whites and blacks, but such racial differentials continued to exist among the least educated women. These differentials persisted in all age-groups: For example, black 25–29-year-olds who had received fewer then 12 years of education had borne 25 percent more children, on average, than had comparable white women; among 35–39-year-olds, the differential was 22 percent. Thus, there is no evidence that racial differentials among the least educated have narrowed.

Women who had first given birth when they were under 18 subsequently bore more children than did women who had waited until they were in their mid-20s, and the differentials were no smaller among 25–29-year-olds than they were among 35–39-year-olds. When the investigators examined the influence exerted by the interval between first marriage and first birth, they found no evidence that variations in current or expected fertility had narrowed. The investigators concluded that their bivariate analyses "strongly suggest that the factors previously important in determining [American women's] fertility . . . continued to be important through 1980, even though the overall fertility level . . . declined substantially in recent decades."

To determine whether this conclusion holds when the effects of the different variables are controlled for simultaneously, the investigators carried out a multivariate analysis of the data. The independent variables were age, age at first birth, education, first birth interval, income and marital status. The researchers also conducted separate analyses for younger and for older women. If the explanatory power of the independent variables was found to be smaller among the younger women than among the older ones, this result would indicate that fertility differentials had become smaller over time.

The researchers found that the results of the multivariate analysis largely resembled those of the bivariate study. Most important, the analysis for white 25–29-year-olds had greater explanatory power than did the analysis for white 35–39-year-olds (accounting for 29 percent and 20 percent of the variance, respectively). This is exactly the reverse of what would have been expected had fertility differentials narrowed. Among blacks, there was no substantial age-related difference.

However, the multivariate analysis appears to confirm that differences in women's anticipated completed family size have diminished. Among white women, the analysis for 25–29-year-old women explained only eight percent of the variance in expected completed fertility, whereas the analysis for

35–39-year-olds explained 18 percent; similarly, among blacks, the levels of explanatory power were 14 percent and 23 percent, respectively, for the two age-groups.

Thus, the investigators find no evidence that fertility differentials have declined, although variation in the number of children expected has narrowed among the youngest age-group. "The eventual convergence or persistence of fertility differentials," they conclude, "depends on the extent to which . . . young women maintain their current expected fertility and prevent unplanned births."

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Unmarried White Women Are Those Most Likely To Place Children for Adoption, NSFG Data Show

The proportion of U.S. women who place their babies for adoption and the proportion who adopt children have remained relatively stable since the mid-1970s. White women are much more likely to have placed an out-of-wedlock baby for adoption than are black women. Unmarried women who have placed their babies for adoption are less likely to be receiving public assistance than are unmarried women who have kept their babies, and adopted children have fared better in material terms than children who have remained with their unmarried mothers. These are some of the major findings of a recent study on adoption carried out by Christine Bachrach, of the National Center for Health Statistics.[1]

The study is based on data from the 1982 National Survey of Family Growth (NSFG), Cycle III, which became the primary source of information on adoption when the federal government stopped compiling national adoption statistics in 1975. The NSFG collected data from a nationally representative sample of 7,969 women aged 15–44, yielding information on both biological and adoptive mothers. The study also looked at data on the social and economic consequences for women of resolving a premarital pregnancy through adoption, and the economic situation of adopted children compared with that of children raised by their biological mothers. The analyses focus on unrelated adoptions—that is, adoptions made by women who have no previous relationship with the adopted child.

Between 1970 and 1975, federal statistics show, the annual number of unrelated adoptions fell from 89,000 to 48,000, a decline that reflected the wider availability of abortion as a means of resolving unwanted pregnancy after 1973, when the procedure became legal. Precise numbers of adoptions since 1975 are unknown. However, on the basis of NSFG data on the proportion of women who say they have adopted children, the proportion who have placed their babies for adoption, and the reported number of adoptions, Bachrach suggests that there might have been a reversal of the downward trend in adoptions since the mid-1970s. For example, the proportion of babies born to unmarried white women that were placed for adoption remained stable from 1976 to 1982, but the total number of babies placed for adoption probably increased, because births among unmarried white women increased from 197,100 in 1976 to 355,180 in 1982.

Adoption Patterns

Of all babies placed for adoption by women aged 15–14 in 1982, 88 percent were born to never-married women; six percent were born to ever-married women who were single at the time of the baby's birth; and six percent were born to women who were married. Six percent of all babies born premaritally to women aged 15–44 in 1982 were placed for adoption. Babies born to single white women were much more likely to have been placed for adoption (12 percent) than were those born to single black women (less than one percent). The likelihood for black women did not change with varying characteristics. By contrast, white women whose fathers had some college education were three times more likely to have placed their babies for adoption than were those whose fathers had not completed high school.

Women who had resolved premarital pregnancies by placing their babies for adoption were similar to women who were premaritally pregnant but were married by the time they had given birth and kept their babies in terms of income, welfare dependency and educational attainment at the time of interview. Single women who had placed their babies for adoption were less likely to be receiving some form of public assistance, less likely to be poor and more likely to have completed high school than were unmarried women who had kept their babies. After adjusting for race, father's education and other factors, the researcher found that 45 percent of single women who had kept their babies were receiving some form of public assistance, compared with 22 percent of premaritally pregnant women who were married before giving birth and kept their babies and 26 percent of women who had placed their babies for adoption. In addition, 61 percent of unmarried women who raised their babies had completed high school, compared with 73 percent of married mothers and 80 percent of women who had placed their babies for adoption.

Both the 1973 and the 1982 NSFG show that slightly more than two percent of ever-married women aged 15–44 had adopted a child. The stability of this rate supports the hypothesis that there has been no decline in adoptions since 1975. Those most likely to adopt an unrelated child were older women, sterile women and women who had never had their own children. Six percent of noncontraceptively sterile women, compared with fewer than one percent of fecund women, had adopted a child. In 1973, the percentage of women who had adopted was significantly higher among women with some college education and among those with family incomes at least twice the poverty level than it was among women who had not completed high school or whose incomes were below the poverty level. In 1982, these differences were not statistically significant, possibly because of the small sample size in that year, according to Bachrach. Differences by race in the percentage of ever-married women who had adopted a child were not significant in either 1973 or 1982.

Adopted children have greater economic advantages than do children who remain with their never-married mothers. In 1982, only two percent of unrelated adopted children were living below the poverty level, compared with 62 percent of children who had remained with their never-married mothers. Fifty-four percent of adopted children were living in families whose incomes were at least three times the poverty level, compared with only eight percent of children who remained with their never-married mothers.

The researcher cautions that the NSFG data have certain limitations. Only 94 of the women surveyed in 1982 had adopted one or more related or unrelated children, and only 60 respondents had placed one or more babies for adoption. Adoption estimates derived from the NSFG are, therefore, based on a small number of sample cases and are subject to large standard errors. Moreover, because the NSFG does not collect data on men who adopt or on women outside of the 15–44 age-range, the sample is not representative of all adoptions. Bachrach adds that the NSFG does not include data on psychological factors, which may be important in the decision to place a baby for adoption. Most of the findings reported are consistent with those of earlier studies.

Noting that "there are ample grounds for expecting that adoption reduces the chances of poverty for the unmarried pregnant woman and her child," the researcher also finds that socioeconomic factors, such as race and father's education, appear to play an important role in the decision to place a baby for adoption. She concludes that there is good reason to believe that economic status may be both a contributing factor in and a consequence of a woman's decision to keep her baby or to place it for adoption.

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Most First Births Are Marital Among Young Women of Mexican Origin

Young U.S. women of Mexican origin currently have higher fertility rates than do young women of Puerto Rican origin, but their births are far more likely to occur within marriage. However, with increasing assimilation into American society, as they become "distanced from traditional norms," young women of Mexican origin will be "far more likely to engage in premarital sex and . . . to bear their first child outside of marriage." These are among the conclusions demographers Katherine F. Darabi and Vilma Ortiz draw from an analysis of data from the 1982 round of the Youth Cohort of the National Longitudinal Surveys of Labor Market Experience (NLSY).[1]

The Data

The NLSY involved a nationally representative sample of 12,686 young people aged 14–21 in 1979. The analysis reported here is based on a subsample consisting of 3,258 white women, 1,473 blacks and 958 Hispanics, of whom 63 percent were of Mexican origin and 16 percent were Puerto Rican. The remainder were of various origins. (In 1981, according to data from the National Center for Health Statistics, 69 percent of all Hispanic births were to women of Mexican origin, 10 percent to Puerto Ricans.[2])

Analysis shows that 41 percent of the young black women had a first birth before reaching the age of 22, as had 19 percent of the whites. Among the two Hispanic groups, the proportions were 38 percent for the women of Mexican origin and 32 percent for the Puerto Ricans. However, over two-thirds of first births to whites and to Mexicans were marital births, whereas approximately 53 percent of Puerto Rican first births and 80 percent of black first births occurred outside of marriage.

When the data on premarital first-birth rates are controlled for socioeconomic status (a composite of father's education, mother's education and father's occupational status), some of these ethnic differentials widen yet further. According to the investigators, "this is due to the fact that while the proportion of women who had early premarital births was inversely related to socioeconomic status for whites, blacks and Puerto Ricans, this was not the case for Mexicans." Young women of Mexican origin who are in the lowest socioeconomic category have a very low rate of premarital first births, but this rate increases with improved status; thus, among women in the highest category, the premarital first-birth rate is very similar for young Mexicans and for blacks (13.5 percent and 12.9 percent, respectively).

When young Mexican women who had a first premarital birth before the age of 22 are examined in terms of their socioeconomic and generational status (that is, whether they or their parents were born in the United States), out-of-wedlock childbearing is shown to increase with the degree of assimilation, even among those in the very lowest socioeconomic category. The investigators postulate from these findings that "for Mexicans, assimilation into U.S. society implies lowered rates of marital fertility and increasing rates of premarital first births."

In trying to explain why young Mexican women are an "anomaly" in terms of their high current rates of marital first births, the authors demonstrate that these rates do not result from earlier marriage. In fact, the data show, the Puerto Rican women in the study were slightly younger at marriage than the Mexican women. The investigators hypothesize, therefore, that "norms proscribing premarital sexual activity are particularly strong in the Mexican community," especially among first-generation families. However, they predict that with the continuing erosion of these values, the patterns of early premarital childbearing among Mexicans will come to resemble those of other Hispanic groups, who are more assimilated into American society.

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Obesity, High Parity May Account for Greater Birth Risk Among Women ≥40

Babies born to women older than 39 are at increased risk of fetal death, low Apgar scores and unusually high birth weights, and their mothers run an increased risk of placenta previa,* according to a study comparing the pregnancies of older mothers with those of women aged 20–30. The investigators conclude, however, that many of the increased risks that characterize childbirth after age 40 may be due not to the mother's age per se but to an increased incidence of obesity and to high parity among older women.[1]

Investigators from the University of Illinois compared the pregnancy outcomes of 511 women aged 40 and older with those of 26,759 women aged 20–30. The study included all deliveries occurring among women in the two age-groups at 13 Illinois hospitals between January 1, 1982, and June 30, 1984. The oldest woman to deliver was 52; however, 94 percent of the older mothers were aged 40–44.

There were a number of significant differences ($p<0.01$) between the two groups of women in the study. The women aged 40 and older had a mean parity of 5.4, compared with an average of 2.4 among those aged 20–30. A higher proportion of the older than of the younger women weighed 200 or more pounds at delivery (15 percent and 10 percent, respectively), with the result that older mothers weighed an average of nine pounds more than younger mothers. Other significant differences included higher rates of hypertension among women 40 and older (10 percent compared with three percent among women aged 20–30) and higher rates of diabetes (seven percent compared with two percent).

The pregnancies of older mothers were

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*A condition in which the placenta implants in the lower portion of the uterus, partially or completely obstructing fetal access to the cervical canal during delivery.

significantly more likely than those of younger women to have been complicated by placenta previa (two percent vs. one percent) and to have been terminated by cesarean section (29 percent vs. 19 percent). However, the two age-groups experienced no differences in the incidence of the other pregnancy complications and outcomes studied—premature detachment of the placenta, postpartum hemorrhage, multiple births, weeks of gestation and length of labor.

The infants of older women had a rate of fetal death that was three times that found among the infants of younger women (15 per 1,000 deliveries compared with five per 1,000)—one of several significant differences between the two groups of babies. Very high birth weights (more than 4,500 g) were significantly more common among the infants of older women than among the infants of younger women (four percent vs. two percent); the difference in the average birth weights of the two groups was also significant—3,344 g and 3,291 g, respectively. The infants born to older women were twice as likely as those born to younger women to have had Apgar scores of three or less at one minute (four percent compared with two percent) and at five minutes (two percent compared with one percent); the average scores at both times were also significantly lower for the infants of older women. In addition, older women gave birth to a higher proportion of male infants than did younger women (57 percent compared with 51 percent, $p<0.05$). There were no significant differences between the two groups of infants in the proportions who were premature, had congenital anomalies or experienced birth trauma, nor was there a significant difference between the two in the neonatal death rate.

When the investigators controlled the data for maternal obesity by comparing only those women in both age-groups who weighed 150 pounds or less at delivery, they found that older women no longer had an increased incidence of hypertension and that their infants no longer ran a significantly increased risk of fetal death, very high birth weight and low Apgar score. However, because differences in fetal death rates and Apgar scores remained large and still favored the infants of younger women, the researchers speculate that the lack of significance may have been due to the smaller sample size. The difference in rates of placenta previa, which remained significant when the data were controlled for smoking and maternal weight, disappeared when women of equal parity were compared.

The researchers have no explanation for the significantly higher proportion of male infants among older women, and were themselves surprised to find no significant difference in congenital anomaly rates, since most reports show these rates to increase among women older than 35. They conclude that the major causes of increased problems in pregnancy and delivery among women aged 40 and older may be the heavier average weight and higher parity of such women. Consequently, they say, older women of low parity and normal weight can probably expect good pregnancy outcomes.

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ANSWERING *THE SILENT SCREAM*

The video tape *The Silent Scream* has been widely distributed to public officials, the media and the public at large. It is a troubling document because it purports to show that the fetus experiences fear and pain in the course of an abortion procedure.

These claims are directly addressed in a recent radio documentary, "Thinking About *The Silent Scream*," involving interviews with eminent neuroscientists. These scientists collectively have completed over 60 years of research on the brain, have written over 150 neuroscience journal articles, and have served as advisors to numerous foundations and organizations including the National Institutes of Health, the National Science Foundation and the President's Science Advisory Council.

The scientists explain, in simple language, new information on the stages of development of the human brain. Their information provides the fundamental knowledge to challenge any claims made by antiabortion groups that the fetus is fully-formed or that it feels, thinks, or has conscious awareness. If you have not heard "Thinking About *The Silent Scream*," then you have not heard these vital facts.

The documentary has been aired on radio stations across the country, and tapes of the broadcast have been distributed to the Supreme Court and to each of the 535 members of the United States Congress. The same documentary is now available on audio cassette.

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Research Note

Contraception for American Women 40 and Over

By Judith A. Fortney

In 1982, there were approximately 13 million American women aged 40–49. Most women of this age are sexually active, and many are still able to conceive.[1] Nearly 28,000 births were reported in 1984 among women in their 40s: 26,846 among 40–44-year-olds and 1,108 among 45–49-year-olds.[2] In addition, 20,450 abortions were reported among women 40 and older in 1983.[3] Nevertheless, most women over the age of 40 have completed their childbearing and no longer want a pregnancy at any time. Moreover, the risks associated with pregnancy are greater for these older women than they are for younger women. Although there were only 14 maternal deaths among 40–44-year-old women in 1980, and two among those aged 45–49,[4] those deaths represent risks of mortality that are nine times higher for the former group, and 25 times higher for the latter group, than the risk for women in their 20s.[5] Further, complications of pregnancy such as toxemia, postpartum hemorrhage and molar pregnancy increase with maternal age, as does the risk of some birth defects.

Therefore, fertility regulation is particularly important to women in these older age-groups. However, the risks associated with certain reversible methods of contraception also increase with a woman's age.

This research note reviews the available data on contraceptive practice among American women 40 and over, and briefly summarizes the advantages and disadvantages of different methods of contraception.

The data come from the 1982 National Survey of Family Growth (NSFG)[6] and the 1982 Market Survey, which was a nationally representative survey carried out by a large pharmaceutical company.[7] Apart from these surveys, there is a remarkable paucity of information about the use of contraception by older women and their reasons for choosing a particular method. Women over the age of 44 have not been included in a national contraceptive prevalence survey since the 1965 National Fertility Survey. However, the Cancer and Steroid Hormone Study[8] carried out by the U.S. Centers for Disease Control in 1982 provides some information about the fecundity status of U.S. women over 44.

The Need for Contraception

By estimating the proportion of women aged 40 and over who are not at risk of an unintended pregnancy, we can determine the proportion in this age-group who are at risk and who are therefore in need of contraception. As may be seen in Table 1, more than 20 percent of women aged 40–44, and about 30 percent of those aged 45–54, have had a hysterectomy or have had their ovaries removed. Natural menopause has occurred in about three percent of women aged 40–44, 11 percent of those aged 45–49 and 43 percent of those aged 50–54. In addition, at any given time, approximately 10 percent of women in the 40–44 age-group are pregnant, postpartum, seeking a pregnancy or not sexually active.

Finally, as the table shows, about 40 percent of women aged 40–44 are protected by contraceptive sterilization—either tubal ligation or vasectomy. Surgical sterilization is by far the most popular method of contraception among women in their 40s, and there is widespread agreement among clinicians that it is the most appropriate method for that age-group. The most obvious advantage of sterilization is its virtually complete effectiveness, a quality particularly attractive to women who are at the end of their childbearing years. Although the surgical risks are somewhat greater for older women than they are for younger women, the overall risk of mortality associated with the procedure is about the same as it is for the IUD or for abortion.[9] Another advantage is that once the postoperative period is over, there are almost no health risks associated with surgical sterilization; in terms of psychological consequences, older women are even less likely to regret having had the procedure than are younger women.[10]

In all, about 75 percent of all women aged 40–44, and an undetermined but presumably larger percentage of women aged 45–54, are not at risk of an unintended pregnancy. This leaves 25 percent of women aged 40–44, or 1.6 million women, exposed to the risk of pregnancy and in need of contraception. Of these women, the survey findings indicate, 21 percent do not use any method (a higher proportion than that found among any other age-group, including teenagers). The remaining women use one of the reversible methods.

Reversible Methods

Table 2 summarizes the findings on the contraceptive practice of older women derived from the 1982 NSFG and the 1982 Market Survey.

- *The condom.* The condom is the most popular reversible method of contraception among women in their early 40s. About 35 percent of women in this age-group who use reversible methods choose condoms. The advantages of condoms are worth repeating: They are not associated with any health risk; they are available over the counter; and they protect against certain sexually transmitted diseases. In addition, condoms may be particularly well suited to the needs of older women, who may have coitus less frequently and who tend to use the method more consistently than do younger women. Decreased fecundity among older women may also contribute to lower method failure rates. One possible disadvantage of the condom is that its use can exacerbate problems of male sex-

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ual performance, which may increase with the age of the user.[11]

- *The IUD.* The second most popular reversible method appears to be the IUD, although the two national surveys yield different estimates of the proportion of women aged 40–44 who use this device. Similarly, there is disagreement among clinicians about the appropriateness of intrauterine contraception for older women. One major disadvantage of the IUD is its association with an increased risk of pelvic inflammatory disease (PID) and subsequent infertility. However, since older women are less likely than younger women to be exposed to sexually transmitted diseases, they run a lower risk of developing PID. Another disadvantage of the IUD is that it may cause bleeding and cramping, which may be exacerbated by the presence of fibroids or of perimenopausal menorrhagia, two conditions that are more prevalent among older women. Insertion of an IUD may be a problem for women who have had previous cervical surgery such as a cone biopsy or who have undergone repair of a prolapsed uterus.

Despite its disadvantages, the IUD remains an excellent method of contraception for older women, second only to sterilization in its effectiveness and convenience. IUD-related problems are less likely to occur among older women than among younger ones.[12] While the risk of PID remains a serious concern, the possible loss of fertility is of less consequence to older women, most of whom have completed their childbearing years.

Since IUDs are a highly appropriate method of fertility regulation for older women, the recent removal of all IUDs except the Progestasert from the U.S. market eliminates an important contraceptive option for American women in this age-group. There is already some evidence that women who can afford to are going to Canada to have an IUD inserted.[13] Planned Parenthood continues to insert copper IUDs while supplies last. [14] Some women who are due to have their IUDs replaced will elect to keep them in place beyond the recommended period of time, and research is needed to determine the consequences of their doing so.

- *Combined oral contraceptives.* There is a great deal of controversy about the extent and advisability of pill use among older women. As Table 2 indicates, the 1982 NSFG found that the pill is the least popular method among women 40–44 who rely on reversible contraception; only three percent of such women use it. The Market Survey, however, found that 16 percent of such women use the pill, indicating that the method is third in popularity. Cycle II of the Health and Nutrition Examination Survey (HANES) found that four percent of *all* women aged 40–44 rely on oral contraceptives.[15] The results of the HANES study suggest that 403,000 women over 40, and 29,000 women over 50, are using the pill.

Table 1. Percentage distribution of U.S. women 40 and older by exposure to the risk of pregnancy, various surveys, various age-groups, 1982

Exposure	NSFG 40–44 (N=794)	Market Survey 40–44 (N=1,102)	CASH* 40–44 (N=956)	CASH* 45–49 (N=1,503)	CASH* 50–54 (N=1,876)
Not at risk	**74.8**	**74.1**			
Noncontraceptively sterile	24.8	18.1	21.2	42.2	71.3
Surgical	(21.8)		(20.1)	(30.9)	(28.3)
Menopausal	(3.0)		(2.1)	(11.3)	(43.3)
Infertile	u	5.8			
Contraceptively sterile	39.7	41.2			
Male	(13.3)	(17.6)			
Female	(26.4)	(23.6)			
Pregnant	0.1	0.4	} 0.3	0.0	0.0
Postpartum	0.2	u			
Seeking pregnancy	1.4	1.2			
Not sexually active	8.6	7.4			
At risk	**25.2**	**25.9**			
Using a reversible method	19.9	20.4			
Not using a method	5.3	5.5			
Total	100.0	100.0			

*Data available only for noncontraceptively sterile women and women who are either pregnant or postpartum.

Note: u = unavailable.

Sources: Special tabulations from the National Survey of Family Growth (NSFG) prepared by William Mosher of the National Center for Health Statistics; special tabulations from the Market Survey prepared by the author; data from the Cancer and Steroid Hormone Study (CASH) provided by the staff of the CDC.

Some gynecologists believe that the use of oral contraceptives is justified for older women who are in good health and who are closely monitored by their physicians. Other doctors, perhaps the majority, would give only qualified approval even under those circumstances. Still others feel that such use is almost never justified. The degree of controversy surrounding the advisability of pill use by older women reflects our incomplete understanding of the effects of premenopausal and postmenopausal estrogens and progestins.

Older women are more likely than younger women to be using oral contraceptives high in estrogen. A study found that 26 percent of women aged 35 or over were taking pills containing more than 50 micrograms of estrogen, compared with 12 percent of all women, and only five percent of those under the age of 20.[16]

While postmenopausal estrogens have been shown to reduce the risk of cardiovascular disease,[17] three large cohort studies and a large number of case-control studies have established beyond a doubt that the risk of myocardial infarction and stroke among oral contraceptive users and nonusers increases with age. However, among women over 40, the relative risk of myocardial infarction is four times greater for pill users than it is for nonusers, and the risk of stroke is five times greater.[18] Among nonsmokers, the absolute risks remain very small even in this age-group, while the risks of pregnancy-related mortality and morbidity increase rapid-

Table 2. Percentage distribution of U.S. women aged 40–44 using a reversible method of contraception, by method, 1982 NSFG and 1982 Market Survey

Method	NSFG (N=794)	Market Survey (N=1,102)
Condom	34.8	34.4
IUD	19.4	12.5
Pill	3.4	15.6
Diaphragm	12.9	9.4
Rhythm	12.3	6.3
Other	16.9*	21.9†
Total	100.0	100.0

*The NSFG provides no breakdown of this category.

†Category consists of spermicides (15.6 percent) and withdrawal (6.3 percent).

ly. Almost all oral contraceptive deaths occur among women who smoke or who are over 35. However, the slim, nonsmoking woman who is older than 35 and whose blood pressure is normal can probably safely use the pill under close medical supervision. Furthermore, oral contraception provides women with excellent cycle control and hormone replacement therapy at a time in their lives when both of these are desirable.[19]

- *Progestin-only pill.* Despite incomplete scientific understanding of the role of progestins in cardiovascular disease, the progestin-only pill is gaining in popularity among clinicians, especially for older women.[20]
- *The diaphragm.* The diaphragm is used by 9–13 percent of women aged 40–44 who depend on reversible contraceptives (see Table 2). The failure rate of the method is lower among older women than among younger ones partly because of the formers' declining fecundity. In addition, the use of spermicides in conjunction with the diaphragm can compensate for the vaginal dryness experienced by some women. However, vaginal laxity or cervical deformities resulting from childbirth may reduce the efficiency of the diaphragm among older women, and arthritis may make insertion difficult for some.[21]
- *Rhythm.* The 1982 NSFG found that 12 percent of 40–44-year-old method users practice rhythm or some variation thereof; other studies have shown a lower percentage. As women approach menopause, the onset of menstrual irregularities makes the method difficult to use. Nevertheless, because older women may have a lower coital frequency and lower fecundity, this method may be both more acceptable and more effective for them than for younger women. In general, rhythm can be recommended only for older women who have used it successfully in the past.
- *Other methods.* There is little or no information available about the use of other contraceptive methods by older women or the effectiveness of such methods. No studies have examined the use of the sponge among older women. According to the Market Survey, six percent of women 40–44 practice withdrawal, but data on the effectiveness of this method for older women are lacking. The same study also found that 16 percent of older women use spermicides alone—that is, without a diaphragm. Spermicides would appear to be an appropriate method for women in this age-group: They may, in fact, be ideal for women who experience vaginal dryness. Spermicides do not offer as much protection against pregnancy as do some other methods, but this disadvantage may be of less consequence to older women because of their lower fecundity.

Conclusions

Older women possibly have a greater array of contraceptive methods available to them than do younger women because of their lower fecundity and reduced concern for future fertility. Sterilization is the preferred method among older women, as it is among U.S. couples over the age of 34, who are more likely to choose sterilization than all other methods combined.[22] Although reduced fecundity makes barrier methods more acceptable for women over 40, the fear of pregnancy may be greater among these women. However, the widespread use of condoms shown in several national surveys suggests that consistent use of this method, coupled with lower fecundity, results in acceptably low failure rates.

The controversy surrounding the wisdom of pill use by older women is not likely to be resolved in the near future. Many women who have remained satisfied with oral contraceptives thus far will continue to use them as they approach menopause, although such women may have difficulty finding a physician to prescribe them. Women who have had problems related to pill use, or those who smoke, will certainly not wish to adopt this method later in life.

One thing is clear—there is a great need for further research into the methods older women choose and the reasons for their preferences. As the baby boom cohort ages, there may be a sufficiently large market to warrant the development of contraceptives designed to suit the particular needs of older women. An oral contraceptive designed to be used through menopause would be particularly desirable.

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A Technical Knockout for Parental Notification

On November 7th, 1986, U.S. District Court Judge Donald Alsop struck down as unconstitutional a 1981 Minnesota law requiring minors who want to have an abortion to notify both parents.[1] *The law had specified that an abortion provider send written notice to both parents of an adolescent who has requested an abortion, and that a 48-hour waiting period be observed before the abortion is performed. The law also contained a judicial bypass clause stipulating that if the teenager does not want to involve each of her parents, she must obtain a waiver of the notification requirement from a judge, by demonstrating either that she is mature and capable of making an informed decision or, if she is not mature, that having the abortion without notifying her parents is in her best interest.*

Judge Alsop concluded that requiring both parents to be notified (even if one parent is no longer part of the family unit) and demanding that the teenager wait 48 hours after the expected receipt of the notice unduly burdened a minor's constitutional rights. Furthermore, Judge Alsop noted, the statute had not succeeded in improving family communication, and had forced teenagers to go through a very stressful court proceeding for little reason. However, the judge voided the statute only on narrow grounds. He noted that although the judicial bypass procedure had serious practical defects, it was entirely consistent with the guidelines set down in previous Supreme Court rulings. The 48-hour waiting period was clearly unconstitutional, but it could be separated from the rest of the law. On the other hand, if the provision requiring notification of both parents were stricken from the law, the statute could not operate, Judge Alsop concluded; therefore, he deemed the entire parental notification law unconstitutional.

Judge Alsop based many of his conclusions on testimony from the judges who had handled more than 90 percent of the bypass petitions presented by Minnesota teenagers since the statute was enacted. Clinic counselors, doctors, psychologists and lawyers who had represented teenagers in their petitions also provided evidence on the workings of the law.

The case represents the first time that the operation of a parental notification statute has been evaluated in court. (The state of Minnesota has since appealed the decision to the Eighth Circuit Court of Appeals.) The following sections have been excerpted from Judge Alsop's opinion.

Findings of Fact

. . . The experience of going to court for a judicial authorization produces fear and tension in many minors. Minors are apprehensive about the prospect of facing an authority figure who holds in his hands the power to veto their decision to proceed without notifying one or both parents. Many minors are angry and resentful at being required to justify their decision before complete strangers. Despite the confidentiality of the proceeding, many minors resent having to reveal intimate details of their personal and family lives to these strangers. Finally, minors are left feeling guilty and ashamed about their lifestyle and their decision to terminate their pregnancy. Some mature minors and some minors in whose best interests it is to proceed without notifying their parents are so daunted by the judicial proceeding that they forgo the bypass option and either notify their parents or carry to term.

Some minors are so upset by the bypass proceeding that they consider it more difficult than the medical procedure itself. Indeed, the anxiety resulting from the bypass proceeding may linger until the time of the medical procedure and thus render the latter more difficult than necessary.

A minor who chooses not to go to court . . . must notify both parents, if they are living, unless the second one cannot be located through reasonably diligent effort. The statute makes no exception for a noncustodial parent who is divorced or separated from the custodial parent, or for a parent who never married the custodial parent. No exception is made in the case of a parent, custodial or not, whom the minor considers likely to react abusively to notification, unless the minor is willing to declare that she is a victim of sexual or physical abuse.

If a minor declares that she is the victim of sexual or physical abuse, [the statute] obligates the recipient of this information to report it to the local welfare agency, police department, or the county sheriff. . . . This obligation binds counselors and physicians at abortion clinics. The welfare agency must report the information to the law enforcement agency, and vice versa.

Minors who are victims of sexual or physical abuse often are reluctant to reveal the existence of the abuse to those outside the home. More importantly, notification to government authorities creates a substantial risk that the confidentiality of the minor's decision to terminate her pregnancy will be lost. Thus, few minors choose to declare they are victims of sexual or physical abuse, despite the prevalence of such abuse in Minnesota, as elsewhere.

In practice, the requirement that the minor notify both parents, if living, affects many minors in single-parent homes who have voluntarily notified the custodial parent. No exception is made, for example, in the case of a noncustodial parent who for years has exhibited no interest in the minor's development. No exception is made for parents likely to react with psychological, sexual or physical violence toward either the minor or the custodial parent. Minors in such circumstances must notify the noncustodial parent, or else go to court for authorization to proceed without notifying the noncustodial parent. Notification of an abusive or even a disinterested absent parent may reintroduce that parent's disruptive or unhelpful participation into the family at a time of acute stress. Alternatively, going to court to seek authorization introduces a traumatic distraction into the family relationship at a stressful juncture. The emotional trauma attending either option tends to interfere with and burden the parent-child communication the minor voluntarily initiated with the custodial parent.

The two-parent notification requirement also affects minors in two-parent homes who voluntarily have consulted with one parent but not with the other out of fear of psychological, sexual or physical abuse toward either the minor or the notified parent. Here, too, the minor must choose either to notify the second parent or to endure the court bypass procedure. Once again, the emotional trauma attending either option tends to interfere with and burden the parent-child communication the minor voluntarily initiated with the custodial parent. . . .

Minors who elect to notify one or both parents by written notice . . . must wait until 48 hours after actual or constructive delivery of written notice. Constructive delivery of mailed notice occurs at noon on the regular mail delivery day following mailing. Thus, [the statute] delays effectuation of a minor's decision to terminate her pregnancy by at least 48 hours and more commonly by 72 hours.

This statutorily imposed delay frequently is compounded by scheduling factors such as clinic hours, transportation requirements, weather, a minor's school and work commitments, and sometimes a single parent's family and work commitments. In many cases, the effective length of the delay may reach a week or more.

During the period for which statistics have been compiled [August 1, 1981, to March 1, 1986], 3,573 bypass petitions were filed in Minnesota courts. Six petitions were withdrawn before decision. Nine petitions were denied and 3,558 were granted. . . .

The court heard testimony [from] judges who collectively have adjudicated over 90 percent of the parental notification petitions filed since August 1, 1981. None of these judges, on direct- or cross-examination, identified a positive effect of the law.

Honorable Allen Oleisky has heard over 1,000 parental notification petitions. He characterizes his function as "a routine clerical function . . . , just like putting my seal and stamp on it." Moreover, he believes that the statute dissuades some minors from having abortions because of the fear of going to court in a distant city.

Honorable Gerald Martin stated that he doesn't "perceive any useful public purpose to what [he is] doing in these cases"; moreover, he finds the court experience difficult for minors. "I think they find it a very nerve-wracking experience," he testified.

Honorable Neil Riley testified that he saw no beneficial effects of the statute and further that he sympathized with "the predicament" the minors were in.

Honorable William Sweeney testified, "I know as a judge you would like to think your decisions are important, that you are providing some—you are doing some legitimate purpose. What I have come to believe . . . [is] that really the judicial function is merely a rubber stamp. The decision has already been made before they have gotten to my chambers. The young women I have seen have been very mature and capable of giving the required consent."

He further testified that "the level of apprehension that I have seen . . . is twice what I normally see in court. . . . You see all the typical things that you would see with somebody under incredible amounts of stress, answering monosyllabically, tone of voice, tenor of voice, shaky, wringing of hands, you know, one young lady had her—her hands were turning blue and it was warm in my office. . . ."

Paul Garrity, who adjudicated the same bypass petitions while a judge in Massachusetts, believed that the Massachusetts law[*] accomplished nothing. "It just gives these kids a rough time. I can't think it accomplishes a darn thing. I think it basically erects another barrier to abortion." Further, he felt going to court was "absolutely" traumatic for minors. "You know, it was just—it was just another thing at a very, very difficult time in their lives," he said.

Clinic counselors, who participate on a daily basis in the law's implementation, are of a similar mind. Paula Wendt has counseled or supervised the counseling of more than 3,000 minors since the law went into effect. She concludes from her conversations with both parents and minors that the law has not promoted family integrity or communication. The law has, more than anything, disrupted and harmed families.

On the basis of her experience, Tina Welsh concludes that the law has not benefited intrafamily communication. A minor's unplanned pregnancy is a crisis . . . not conducive to an attempt to build good family communications. Welsh does not believe that the law helps teenagers make a better decision about whether to have an abortion or continue the pregnancy. . . .

The public defenders who participate in bypass proceedings believe that the law serves no beneficial purpose. Its sole function, in their view, is to create a hurdle and impose additional stress upon the young women. Similarly, the guardians *ad litem*[†] do not perceive a beneficial purpose to their participation in the process. . . .

Minors who seek authorization in Minnesota courts for confidential abortions tend to be above average in intelligence, education and personal motivation. They also tend to be ambitious and concerned about the effect their decision will have on their futures.

Minnesota courts have denied only an infinitesimal proportion of the petitions brought since 1981. This fact indicates that in Minnesota, immature . . . minors rarely seek judicial authorization to terminate their pregnancies without parental involvement. Such minors either inform their parents, obtain an abortion outside Minnesota, or carry the pregnancy to term.

Defendants offered the court no persuasive testimony upon which to base a finding that Minnesota's parental notification law enhances parent-child communication, or improves family relations generally. . . .

The court did not expect defendants to establish that in every case Minnesota's parental notification law protects pregnant minors, promotes parent-child communication, and improves family relations generally. Defendants did establish that notification can serve these interests in individual cases. Defendants failed, however, to establish that the law promotes these values more than it undermines them. Five weeks of trial have produced no factual basis upon which the court can find that [the statute] on the whole furthers in any meaningful way the state's interest in protecting pregnant minors or assuring family integrity. . . .

Divorce or separation usually impairs family communication severely. The noncustodial parent often has very little communication with the child. In addition, communication between divorced or separated spouses frequently is marked [by] the kind of hostility and angry vindictiveness that characterized the divorce or separation.

The effect of compelling an adolescent to share information about her pregnancy and abortion decision with both parents in a divorced or separated situation can be harmful. The noncustodial parent often will reintegrate with the family in a disruptive manner. The adolescent may be perplexed as to why the noncustodial parent should become an important factor in her life at this point, especially when the parent previously has paid her little attention and offered little support. Moreover, the testimony revealed no instances in which beneficial relations between a minor and an absent parent were reestablished following required notification. Therefore, the minor may suffer disappointment when an anticipated reestablishment of her relationship with the absent parent does not occur, as is most likely given the trying circumstances under which communication is renewed.

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[*] The parental notification statute that went into operation in 1981 contained a judicial bypass provision similar to Minnesota's.

[†] A guardian *ad litem* is an adult, often a lawyer, who is appointed by the court to look after the minor's interests in the case.

Involuntary involvement of the second biological parent is especially detrimental when the minor comes from an abusive, dysfunctional family. Notification [as to] the minor's pregnancy and abortion decision can provoke violence, even where the parents are divorced or separated. Studies have shown that violence and harassment may continue well beyond the divorce, especially when children are involved.

The reaction of the custodial parent to the requirement of forced notification is often one of anger, resentment and frustration at the intrusion of the absent parent. Frequently, the custodial parent fears that the absent parent will use the notification to threaten the custody rights of the custodial parent. Furthermore, a mother's perception in a dysfunctional family that there will be violence if the father learns of the daughter's pregnancy is likely to be an accurate perception.

Twenty to 25 percent of the minors who go to court either are accompanied by one parent who knows [of] and consents to the abortion or have already told one parent of their intent to terminate their pregnancy. The vast majority of these voluntarily informed parents are women who are divorced or separated from spouses whom they have not seen in years. Going to court to avoid notifying the other parent burdens the privacy of both the minor and the accompanying parent. The custodial parents are angry that their consent is not sufficient and fear that notification will bring the absent parent back into the family in an intrusive and abusive way.

Minors who ordinarily would notify one parent may be dissuaded from doing so by the two-parent requirement. A minor who must go to court for authorization in any event may elect not to tell either parent. In these instances, the requirement that minors notify both biological parents actually reduces parent-child communication. . . .

Constitutionality of Minnesota's Parental Notification Law

To this court's knowledge, it is the first ever to examine a parental notification or consent substitute statute in actual operation. . . .

Were this court writing on a clean slate, it could not uphold the constitutionality of Minn. Stat. §144.343 (2)–(7) under the intermediate scrutiny appropriate in challenges to regulations that burden the fundamental rights of minors. But it is not this court's place to determine the assumptions upon which the Supreme Court based its holdings in *Bellotti II*[2] and *Ashcroft*.[3] . .

. . . The court concludes that the judicial bypass procedure created by [the statute], as presently executed by Minnesota courts and the other offices that participate in the bypass proceedings, complies with the procedural requirements set forth in *Bellotti II* and approved in *Ashcroft*. Therefore, the court must reject plaintiffs' challenge to Minnesota's notification/bypass requirement as a whole.

Two-Parent Notification Requirement And Waiting Period

. . . Plaintiffs contend the statute's two-parent notice requirement unduly burdens the exercise by minors of the right to seek an abortion. The court finds that this requirement places a significant burden upon pregnant minors who do not live with both parents. Particularly in these cases, notification of an abusive, or even a disinterested, absent parent has the effect of reintroducing that parent's disruptive or unhelpful participation into the family at a time of acute stress. Similarly, the two-parent notification requirement places a significant obstacle in the path of minors in two-parent homes who voluntarily have consulted with one parent but not with the other out of fear of psychological, sexual or physical abuse toward either the minor or the notified parent. . . .

The Supreme Court has concluded that the requirement of obtaining both parents' consent does not unconstitutionally burden a minor's right to seek an abortion "[a]t least when the parents are together and the pregnant minor is living at home."[4] When all three live together, both the father and the mother have an interest—one normally supportive—in helping to determine the course that is in the best interests of the daughter. This court concludes, however, that a regulation requiring notification of both parents even when the nuclear family unit either has broken apart or has never formed is not reasonably designed to further the state's interest in protecting pregnant minors. . . .

. . . A notification requirement would be an empty formalism without practical effect if the abortion could proceed before the parental consultation could take place. However, the waiting period must effectuate actual consultation without unduly burdening the opportunity of pregnant minors to obtain an abortion. In view of the logistical obstacles facing Minnesota women who live in counties without a regular provider of abortion services, the court believes a 48-hour waiting period is excessively long. Travel to an abortion provider, particularly in winter from a rural area in Minnesota, can be a very burdensome undertaking. A requirement that a minor either bear this burden twice or spend up to three additional days in a city distant from her home cannot be justified by the state's interest in encouraging parental consultation, because a shorter waiting period would effectuate that interest as completely. Therefore, the court concludes that if a minor chooses to notify her parents by certified mail as provided in [the statute], the state properly may deem delivery to occur at 12:00 noon on the next day on which regular mail delivery takes place, subsequent to mailing. The state further may impose some reasonable waiting period subsequent to delivery of notification during which consultation may occur. Under conditions presently existing in Minnesota, however, 48 hours is an unreasonable waiting period. Therefore, the court will enjoin defendants from enforcing the 48-hour waiting period imposed by [the statute]. . . .

The language of [the statute] defining "parent" as "both parents of the pregnant woman if they are both living, one parent of the pregnant woman if only one is living or if the second cannot be located through reasonably diligent effort, or the guardian or conservator if the pregnant women has one" is [an inseparable part of the statute]. The Minnesota legislature would not have enacted a statute requiring notification of a minor's parents prior to the abortion without identifying the individuals entitled to such notice. More importantly, the remainder of the statute cannot be given effect without the offending language.

In addition, this court is ill situated to determine what alternative definition the legislature would employ to remedy the constitutional infirmity identified in this decision. . . . Therefore, the definition of parent . . . is not severable from the remainder of the statute. The court must enjoin defendants from enforcing [it] in its entirety.

References

1. Hodgson v. Minnesota, 648 F.S. up. 756 (D. Minn. 1986).

2. Bellotti v. Baird, 443 U.S. 622 (1979).

3. Planned Parenthood Association of Kansas City v. Ashcroft, 462 U.S. 476 (1983).

4. Bellotti v. Baird, 443 U.S. at 649 (1979).

Credits

Cover design by Mark Kellogg.

Cover photographs: (foreground) Mimi Forsyth, Monkmeyer, (background) Herman Engel, Planned Parenthood Federation of America.

These credits were inadvertently dropped from the November/December 1986 issue of *Family Planning Perspectives*:

Cover design and illustration by Mark Kellogg.

Books in Review

Population Paranoia

The Fear of Population Decline
by Michael S. Teitelbaum and Jay M. Winter, Academic Press, Orlando, Fla., 1985, $34.00 (cloth), $19.95 (paper), 201 pp.

Reviewed by C. Alison McIntosh

Seemingly more by good luck than by good management, the appearance of *The Fear of Population Decline* about a year ago was nicely timed to introduce a note of rationality into the U.S. debate on the implications of continued below-replacement fertility in the West.The injection of reason was, nonetheless, the authors' intention. Referring to the "emotional" or "hysterical" tone of some of the current discussion, Teitelbaum and Winter try "to provide a dispassionate survey of a subject [that] is potentially explosive in political terms" [p. xi] by disentangling the scientific interpretation of demographic trends from the "confusions and misunderstandings" that have colored the ways in which those trends have been perceived by some political and intellectual elites.

Teitelbaum and Winter suggest that the fear of population decline is a perceptual phenomenon based on expectations derived from 200 years of sustained demographic growth. In that context, contemporary demographic changes, which are the long-term result of societal changes begun by the Industrial Revolution, seem now to threaten the very basis of society. The fear of population decline is so deeply rooted that it has become entangled with all of the major social, political and ideological movements of the past century.

In the authors' view, "clarity about population questions today requires an understanding of what has occurred . . . over the past century" [p. 13], so they have devoted the first part of their book to a discussion of the emergence of population fears in the modern historical period (from 1879 to 1945). The second part treats the current debate over declining population growth and outlines the policy responses attempted so far by Eastern and Western European governments. A bridging chapter assesses the impact of the baby boom period, when fears of population decline receded. This change in thinking owed much to the combined effects of higher fertility and the rise of social democracy, which has usually downplayed the importance of population growth as a source of national power.

The book opens with a discussion of some demographic terms and concepts commonly misinterpreted and misused by nonspecialists. This pattern of careful explication continues throughout the book. Each section begins with a review of demographic trends in the period under study before the authors go on to examine the ways in which those trends were perceived and interpreted by contemporary thinkers. The book concludes with an evaluation of the costs and benefits of the various policy options available to governments today. Several policy statements by the United States and by various European governments that are not generally available have been included as appendices, together with a useful set of total fertility rates (covering the years 1920–1983) for 26 industrialized countries.

In the book's historical section, the authors attribute much of the fear of population decline to the perception that low fertility poses a military threat in periods that are fraught with severe international tension. This part of the analysis focuses primarily on France, where, because the demographic transition began particularly early, low fertility generated acute pronatalist sentiments long before such feelings became widespread throughout Europe. The analysis illustrates the extent to which the fear of population decline in France spilled over to influence seemingly unrelated political events, such as the Dreyfus affair.

Fears of being overrun by more fecund nations later affected other European countries, but these developments are only touched on by Teitelbaum and Winter. That is a pity; it would have been interesting to learn, for example, the authors' views on the expansionist ideas of Hitler's Germany and Mussolini's Italy that did so much to set the tone of the interwar years.

Rather than addressing this question, however, the authors explore a relatively unknown byway—British anxiety over the potential threat to the nation's imperial power that was posed by the high level of physical unfitness among the lower classes. This problem had been revealed following Britain's poor performance in the Boer War. As German aggressiveness mounted through the first decade of the 20th century, the poor health of potential British army recruits became a matter of serious concern to a nation that had seldom felt itself threatened by numerically superior forces. In Teitelbaum's and Winter's view, this new concern over the quality of the population underlay the public health and social insurance measures introduced by the Liberal government just prior to the First World War. The authors are quite correct in asserting that the Boer War helped draw attention to the ill health of the British working classes, and was influential in determining the timing of the passage of the National Health Insurance Act of 1911. One could argue, however, that the roots of Lloyd George's social insurance program were spread more widely and deeply than that. The program could also be seen as the culmination of a continuing effort to redress the inequities and inadequacies of the 1843 revision of the Poor Laws. British concern over the health of the nation's troops was of a different order, therefore, than the French preoccupation with high infant mortality, which was cited as one cause of that country's failure to grow.

The authors extend their discussion of qualitative decline to an analysis of the eugenics movement. Eugenicists saw two threats to the quality of a population: One, based on class, stemmed from the notion that the lower fertility of the upper classes could lead to their overthrow by the more fecund lower orders; the second, based on racism, grew out of concern that the indigenous population might eventually be outnumbered because of immigration and miscegenation. Their review of the literature leads Teitelbaum and Winter to conclude that while eugenics is often thought to have been synonymous with Nazism, it was not, in essence, a fascist movement. Eugenic ideas were current in most European nations, including socialist Sweden, and in the United States during the early years of the century; however, the policies of the Nazis brought eugenics into disrepute even before advances in genetic science disclosed the faulty premises on which the movement was based. The relevance of this discussion to our own society is that as in the past, fear over the potential loss of cultural—and maybe physical—integrity underlies much of the West's current hostility to immigration from non-Western nations.

In their discussion of postwar events, Teitelbaum and Winter describe and analyze demographic trends and the theories that have been advanced to explain them. They

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place the two demographic reversals that have taken place in the postwar period, the baby boom and the baby bust, in their economic and political contexts—Keynesian economics, social democracy and the women's movement in the case of the baby boom; the resurgence of liberal capitalism and political conservatism in the case of the baby bust. The authors then analyze the likely national and international consequences of prolonged zero population growth and of population decline, and suggest that declining numbers are unlikely to present insurmountable barriers to the recruitment of military manpower or for the dynamism and innovativeness of society. They contend that as fertility decline spreads throughout the developing world, the wide gap in population between developed and developing countries may eventually close slightly, although some in the West probably will continue to worry about the numerical imbalance.

The authors also argue that the economic implications of the changing age-structure of the U.S. population will probably present the most important problems in the years ahead—particularly those posed by the larger numbers of elderly dependents relative to the size of the workforce. Teitelbaum and Winter point out that modifications will have to be made, and indeed are being made, in the structure of the social security system. Nonetheless, with both positive and negative economic consequences, it is as yet too early to know what the overall effects will be. Finally, Teitelbaum and Winter assert that problems may also arise because of changes in the ethnic composition of the U.S. population as a result of immigration. However, they stress that the significance of immigration as a source of population growth is enhanced as the level of natural increase—the balance between fertility and mortality, excluding immigration—declines.

While their discussion of the likely socioeconomic impact of low fertility is cogent, Teitelbaum's and Winter's most significant contribution is probably their discussion of demographic dynamics. Here, they warn against extrapolations that generate undue alarm. The range of feasible projections, they observe, extends from only moderate growth to only moderate decline over relatively long periods of time, and they conclude that the most appropriate policy response at present is to watch and wait. The authors point out that if, after a decade or more, fertility throughout Europe has fallen to a level comparable to that observed currently in West Germany (a total fertility rate of 1.3–1.4), only then might it be appropriate to consider major policy changes.

The book ends with a discussion of four logically possible types of policy response. One, limiting access to the means of fertility regulation, as has been tried in some Eastern European countries, is bound to be politically unattractive in the West. On the other hand, providing positive incentives for childbearing—such as family allowances, long postmaternity leaves and more day-care and after-school recreation centers—is likely to be extremely costly. For example, if Britain, Sweden and West Germany were to offer allowances for a three-child family similar in purchasing power to those introduced in Bulgaria and Hungary in 1978, they would need to spend at least twice as much as they now do. A third possibility is increased immigration, although the authors believe that for political reasons, such a policy would be difficult to sustain at a high enough level over a long period. A final option is simply to adapt to demographic trends rather than try to reverse them; the U.S. government is adopting this approach in small ways in the areas of social security and health care.

Overall, Teitelbaum and Winter believe that a combination of positive incentives and social security reform will ameliorate any long-term negative effects of low fertility, and they may well be right. On the other hand, the authors may have underestimated the political cost of introducing a comprehensive family policy in the United States, a country that has long eschewed measures of this type and that has set great store by individual responsibility. They may also have overestimated the political cost of high levels of immigration, considering that the United States has traditionally looked to foreigners to supply labor.

It is impossible in this brief review to capture the richness and subtlety of the analysis presented in *The Fear of Population Decline.* This is an important book that lays out the complexities and ramifications of contemporary demographic dilemmas, placing them squarely before the reader. In so doing, Teitelbaum and Winter defuse alarm and bring a sense of perspective to the issue. It is to be hoped that the book will be widely and carefully read by academics and policy-makers in this country.

Teenage Pregnancy in Industrialized Countries

Elise F. Jones et al.

Why are teenage pregnancy rates higher in the United States than in almost any other developed country, and what can be done to reverse this trend? Comparing data on teenage reproductive behavior in the United States and in five culturally similar countries, this book challenges conventional assumptions about the factors that lead to the unusually high rates of abortion and childbearing among American teenagers and suggests policies that might reduce the incidence of teenage pregnancy in the United States. $30.00

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Jonathan B. Imber

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Contraindications 1. Known or suspected pregnancy (see *Warning* #5). 2. Thrombophlebitis or thromboembolic disorders. 3. Past history of deep vein thrombophlebitis or thromboembolic disorders. 4. Undiagnosed abnormal genital bleeding. 5. OCs should not be used by women who have or have had any of the following: a. cerebral vascular or coronary artery disease, including myocardial infarction; b. known or suspected carcinoma of the breast; c. known or suspected estrogen dependent neoplasia; d. benign or malignant liver tumor that developed during use of OCs or other estrogen containing products.

WARNINGS: Cigarette smoking increases the risk of serious cardiovascular side effects from OC use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use OCs should be strongly advised not to smoke.

The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective, case-control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS. Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI). Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S., so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE. Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK. Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES. A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34 – 5/100,000; ages 35-44 – 33/100,000; ages 45-49 – 140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34 – 1/6700 for nonsmokers and 1/2000 for smokers; ages 45 and over – 1/2500 for nonsmokers and 1/500 for smokers. Risk appeared to increase with parity, but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth, except for OCs in women over 40 who smoke. (Rates given for pill only smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS – RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40 +
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C,D	C
Nonsmokers (other predisposing conditions)	C	C,B	B,A

A – Use associated with very high risk
B – Use associated with high risk
C – Use associated with moderate risk
D – Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions.* Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden, or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma.* Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case-control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors.* Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen." The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* Use of female sex hormones – estrogenic and progestational agents – during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1:1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case-control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1/1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective, and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease.* Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects.* Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure.* An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences, or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache.* Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility.* There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding.* OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast-fed child have not been determined. If feasible, defer OC use until the infant has been weaned.

Precautions *GENERAL.* 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. DRUG INTERACTIONS. OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS.* See Warnings. *PREGNANCY.* Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS.* See Warnings.

Adverse Reactions An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hermorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package Insert)

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Family Planning

Perspectives

Volume 19, Number 2, March/April 1987

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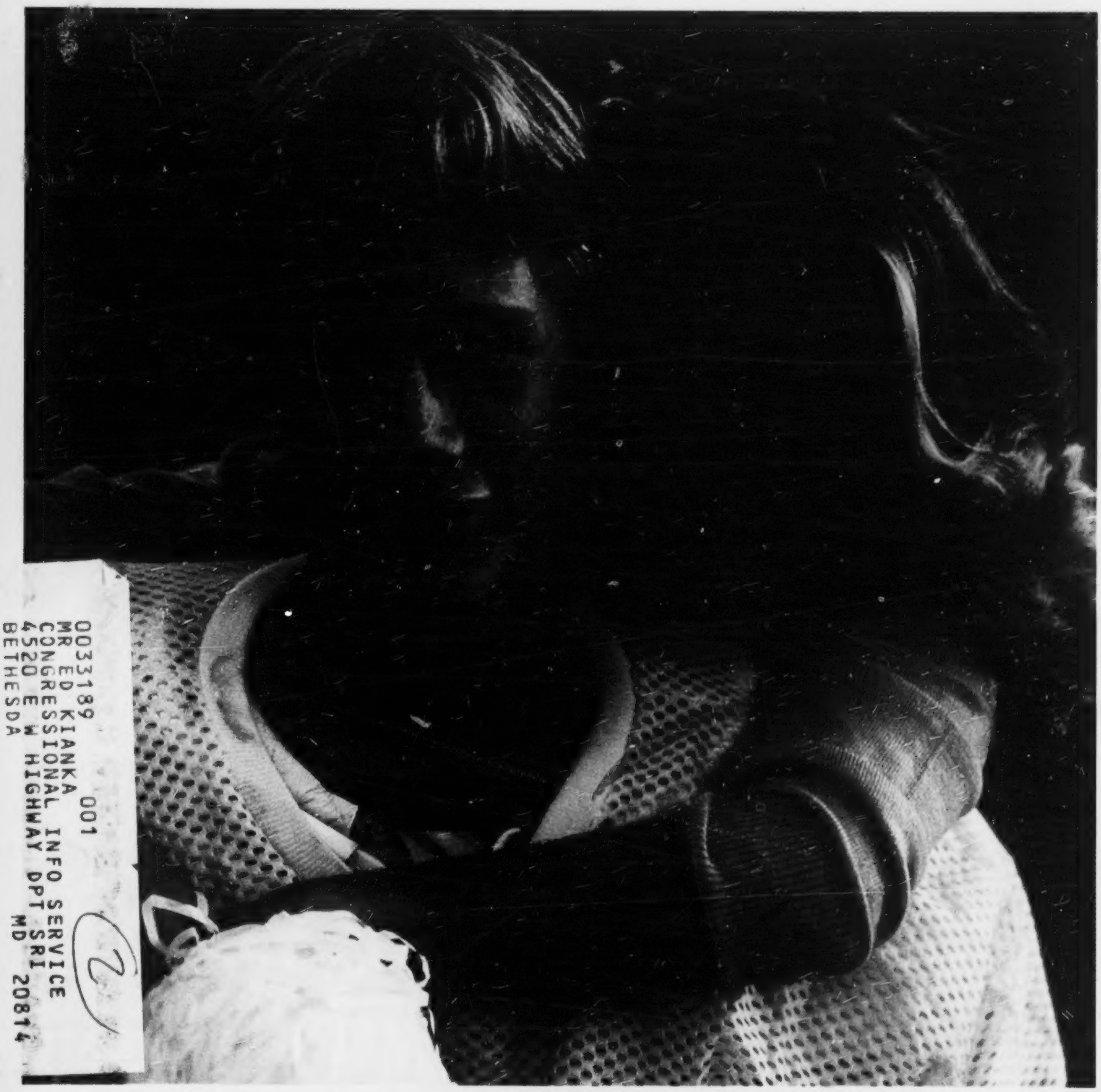
Family Planning Clinic Services in U.S. Counties
The Abortion Issue in the 1984 Elections

Trends in Sexual Activity Among Teenagers



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FOR LOW
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PRESCRIBE

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(1.5 mg norethindrone
acetate and 30 mcg ethinyl
estradiol tablets,
USP) 1.5/30

PARKE-DAVIS
Division of Warner-Lambert Company
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Please see next page for brief summary of prescribing information.
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PD-21-JA-3740-P-1(1-86)

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PARKE-DAVIS
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PD-21-JA-3741-P-1(1-86)

LOESTRIN*

(norethindrone acetate and ethinyl estradiol tablets, USP) See section under **Special Notes on Administration** and **How Supplied.**

Before prescribing, please see full prescribing information. A Brief Summary follows:

DESCRIPTION

Loestrin Products are progestogen-estrogen combinations.

INDICATIONS AND USAGE

Loestrin Products are indicated for the prevention of pregnancy in women who elect to use oral contraceptives.

In clinical trials with Loestrin 1/20 involving 15,899 therapy cycles, there was a pregnancy rate of 0.75 per 100 woman-years. In clinical trials with Loestrin 1.5/30 involving 17,139 cycles, there was a pregnancy rate of 0.49 per 100 woman-years.

Dose-related risk of thromboembolism from oral contraceptives: Studies have shown a positive association between the dose of estrogens in oral contraceptives and the risk of thromboembolism. It is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The oral contraceptive prescribed for any given patient should be that product which contains the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance.

CONTRAINDICATIONS

1. Thrombophlebitis or thromboembolic disorders.
2. A past history of deep-vein thrombophlebitis or thromboembolic disorders.
3. Cerebral vascular or coronary artery disease.
4. Known or suspected carcinoma of the breast.
5. Known or suspected estrogen-dependent neoplasia.
6. Undiagnosed abnormal genital bleeding.
7. Known or suspected pregnancy (See No. 5 under WARNINGS).
8. Benign or malignant liver tumor which developed during the use of oral contraceptives or other estrogen-containing products.

WARNINGS

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with the use of oral contraceptives is well established. Studies have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic.

Cerebrovascular disorders: In a collaborative study in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than nonusers, and the risk of thrombotic stroke was 4.0 to 9.5 times greater.

Myocardial infarction: An increased risk of myocardial infarction associated with oral contraceptives has been reported confirming a previously suspected association. These studies found that the greater the number of underlying risk factors (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) for coronary artery disease, the higher the risk of developing myocardial infarction, regardless of whether the patient was an oral contraceptive user or not. Oral contraceptives, however, were found to be a clear additional risk factor.

It has been estimated that users who do not smoke (smoking is considered a major predisposing condition to myocardial infarction) are about twice as likely to have a fatal myocardial infarction as nonusers who do not smoke. Oral contraceptive users who are smokers have about a fivefold increased risk of fatal infarction compared to users who do not smoke, but about a tenfold to twelvefold increased risk compared to nonusers who do not smoke. The amount of smoking is also an important factor.

Risk of dose: In an analysis of data, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in oral contraceptives; however, the quantity of estrogen may not be the sole factor involved.

Persistence of Risk: In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of oral contraceptive use for cerebrovascular disease and 9 years for myocardial infarction. In addition, a prospective study suggested the persistence of risk for subarachnoid hemorrhage.

Estimate of excess mortality from circulatory diseases: The risk of diseases of the circulatory system is concentrated in older women, in those with a long duration of use, and in cigarette smokers.

A study of available data from a variety of sources concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of oral contraceptives in women over 40 who smoke.

The risk of thromboembolic and thrombotic diseases associated with oral contraceptives increases with age after approximately age 30 and, for myocardial infarction, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia, and especially by cigarette smoking.

The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders. Should any occur or be suspected, the drug should be discontinued immediately.

A fourfold to sixfold increased risk of postsurgery thromboembolic complications has been reported in users. If feasible, oral contraceptives should be discontinued at least four weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization.

2. *Ocular lesions.* Neuro-ocular lesions, such as optic neuritis or retinal thrombosis, have been associated with the use of oral contraceptives. Discontinue the oral contraceptive if there is unexplained sudden or gradual, partial, or complete loss of vision, onset of proptosis or diplopia, papilledema, or retinal vascular lesions.

3. *Carcinoma.* Long-term continuous administration of estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver.

In humans, an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women has been reported. However, there is no evidence suggesting increased risk of endometrial cancer in users of conventional combination or progestogen-only oral contraceptives.

Studies found no evidence of increase in breast cancer in women taking oral contraceptives; however, an excess risk in users with documented benign breast disease was reported.

There is no confirmed evidence of an increased risk of cancer associated with oral contraceptives. Close clinical surveillance of users is, nevertheless, essential. In cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms, should be monitored with particular care.

4. *Hepatic Tumors.* Benign hepatic adenomas have been found to be associated with oral contraceptives. Because hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage, they should be considered in women presenting abdominal pain and tenderness, abdominal mass, or shock.

A few cases of hepatocellular carcinoma have been reported in women taking oral contraceptives. The relationship of these drugs to this type of malignancy is not known at this time.

5. *Usage in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* During early pregnancy, female sex hormones may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. Although there is no evidence at the present time that oral contraceptives further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use oral contraceptives instead of other methods of contraception.

An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of oral contraceptives in pregnancy.

In the past female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective for these uses.

There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing oral contraceptives.

Pregnancy should be ruled out before continuing an oral contraceptive in any patient who has missed two consecutive menstrual periods. If the patient has not adhered to the schedule, the possibility of pregnancy should be considered at the time of the first missed period, and oral contraceptives should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed.

Women who discontinue oral contraceptives with the intent of becoming pregnant should use an alternate form of contraception for a period of time before attempting to conceive.

Administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy.

6. *Gallbladder Disease.* Studies report an increased risk of surgically confirmed gallbladder disease in users of oral contraceptives.

7. *Carbohydrate and Lipid Metabolic Effects.* Because decreased glucose tolerance has been observed in a significant percentage of patients, prediabetic and diabetic patients should be carefully observed while receiving oral contraceptives.

An increase in triglycerides and total phospholipids has been observed.

8. *Elevated Blood Pressure.* An increase in blood pressure has been reported in patients receiving oral contraceptives. The prevalence in users increases with longer exposure. Age is also strongly correlated with development of hypertension. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure.

9. *Headache.* Onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of oral contraceptives.

10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and amenorrhea are frequent reasons for patients discontinuing oral contraceptives. In breakthrough bleeding, nonfunctional causes should be borne in mind. In undiagnosed abnormal bleeding from the vagina adequate diagnostic measures are indicated to rule out pregnancy or malignancy.

Women with a past history of oligomenorrhea or secondary amenorrhea or young women without regular cycles should be advised that they may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of oral contraceptives.

11. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures.

12. *Breast Feeding.* Oral contraceptives may interfere with lactation. Furthermore, a small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs.

PRECAUTIONS

1. A complete medical and family history should be taken prior to the initiation of oral contraceptives. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen, and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, oral contraceptives should not be prescribed for longer than one year without another examination.
2. Preexisting uterine leiomyomata may increase in size.
3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree.
4. Oral contraceptives may cause fluid retention and should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated.
5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice. If jaundice develops, the medication should be discontinued.
6. Steroid hormones may be poorly metabolized and should be administered with caution in patients with impaired liver function.
7. Users may have disturbances in normal tryptophan metabolism, which may result in a relative pyridoxine deficiency.
8. Serum folate levels may be depressed.
9. The pathologist should be advised of oral contraceptive therapy when relevant specimens are submitted.
10. Certain endocrine and liver function tests and blood components may be affected:

(a) Increased sulfobromophthalein retention. (b) Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. (c) Increased thyroid-binding globulin (TBG) leading to increased circulating total thyroid hormone. (d) Decreased pregnanediol excretion. (e) Reduced response to metyrapone test.

Drug interactions: Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin.

ADVERSE REACTIONS

An increased risk of the following serious adverse reactions has been associated with oral contraceptives: Thrombophlebitis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gallbladder disease, benign hepatomas, congenital anomalies.

There is evidence of an association between the following conditions and the use of oral contraceptives, although additional confirmatory studies are needed: Mesenteric thrombosis, neuro-ocular lesions, eg, retinal thrombosis and optic neuritis.

The following adverse reactions have been reported in patients receiving oral contraceptives and are believed to be drug-related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, dysmenorrhea, amenorrhea during and after treatment, temporary infertility after discontinuance of treatment, edema, chloasma or melasma, breast changes, change in weight, change in cervical erosion and cervical secretion, possible diminution in lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, change in corneal curvature, intolerance to contact lenses.

The following adverse reactions have been reported and the association has been neither confirmed nor refuted: Premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, vaginitis, porphyria.

Special Notes on Administration

Loestrin **21**: Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after discontinuing medication.

Loestrin **Fe**: Menstruation usually begins two or three days, but may begin as late as the fourth or fifth day, after the brown ferrous fumarate tablets have been started.

Because of the relatively low estrogenic content, Loestrin (norethindrone acetate and ethinyl estradiol tablets, USP) is not a good cycle regulator. There are patients whose inherent hormone balance will require larger amounts of estrogen than that contained in Loestrin to achieve cyclic regularity. These patients experience altered bleeding patterns, which do not conform to treatment schedules. It is important that patients adhere to the dosage schedule regardless of when bleeding occurs.

The physician should be alert to the fact that the irregular bleeding patterns could mask bleeding from organic cause, and appropriate diagnostic measures should be taken if the bleeding persists or continues after changing to a higher estrogen content product.

After several months, bleeding may be reduced to a virtual absence; reduced flow may be a result of medication and not indicative of pregnancy.

HOW SUPPLIED

Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets; each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol, in packages of five compacts and packages of five refills.

Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol; each brown tablet contains 75 mg ferrous fumarate, USP in packages of five compacts and packages of five refills.

Caution—Federal law prohibits dispensing without prescription.

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PARKE-DAVIS
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Morris Plains, New Jersey 07950

Family Planning

Perspectives

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Letters from Readers

Elucidating Differences in Teenage Pregnancy

In the generally excellent article by Susheela Singh ("Adolescent Pregnancy in the United States: An Interstate Analysis," 18:210, 1986), the statistical analysis fails to be entirely convincing at two key points. First, the author's decision not to control for the percentage of teenagers who were married seems perverse. Granted, as the article states, the relationship between teenage sexual activity and teenage marriage rates is hardly a strong one at the national level. However, in an article that specifically examines the *social* factors related to pregnancy, birth and abortion among teenagers, the marriage rate for that age-group would seem to be one of the most interesting of such factors. For example, if marriage is encouraged among teenagers, will they be discouraged from becoming pregnant or bearing children? To what extent do pregnancies and births within teenage marriages—many of the births arising from prenuptial conceptions—affect the interstate differences that are otherwise so lucidly explained? Teenage marriage, if nothing else, is likely to be a powerful indicator of conservative social attitudes (perhaps better than most of the author's other measures), and should not have been excluded from the analysis if inclusion was practical.

The second point involves the rather strained interpretation of the relationship between the proportion of teenagers served at organized family planning clinics and teenage pregnancy rates. In particular, it is almost impossible to conceive how the "percentage of the population living in counties with large abortion providers" is a valid control for this relationship. Because abortion occurs *after* conception, it would require highly suspect assumptions to postulate an effect of such services on pregnancy rates that is independent of the provision of family planning services. Indeed, Singh never specifies that large abortion providers are counted in the underlying data separately from other family planning services; large family planning clinics often perform both functions, so the use of this measure as a "control" may in fact involve significant double-counting.

The only explanation offered for introducing the abortion provider control into the analysis is that it is "plausible that high levels of teenage pregnancies . . . would stimulate provision not only of family planning services but of abortion services as well." Perhaps, but the measure introduced is based on 1980 data only. Thus, it is impossible to determine which came first, higher pregnancy rates or greater access to abortion services. Further, how does controlling for access to a postpregnancy service reduce the potential for spurious relationships with prepregnancy social factors such as poverty, race and urbanization? Finally, how does the pairing of 1970 birthrates and 1980 abortion services—both of which are most likely to be results, not causes, of teenage pregnancy—help produce a better measure of the fundamental relationship in question? Each of those measures added separately to the author's basic controls shows some positive relationship between high levels of family planning services and teenage pregnancy rates. Putting them together looks to this reader like a highly questionable statistical manipulation aimed at avoiding a possibly uncomfortable conclusion.

In contrast, use of the abortion provider control seems justified in examining teenagers' birthrates and abortion rates, both of which are almost certainly affected directly by the level of abortion services. In addition, because the 1970 birthrate may reflect longstanding social conditions in a given area, this measure appears to be a useful control variable in all of the relationships that were studied.

Gregory A. Loken
Executive Director
Institute for Youth Advocacy
Covenant House—Under 21

The Author Replies:

In the study, the proportion of teenagers who are married was treated in the same manner as other demographic and social variables, and was included in a separate regression with the basic controls (the percentage black, the percentage urban and the percentage poor). This analysis showed that a higher proportion married was strongly associated with *higher* pregnancy rates, *higher* fertility rates and *lower* abortion rates (although this last relationship was not significant). Therefore, it would seem that encouraging marriage does not discourage either pregnancy or childbearing. The reason for the very significant association between marriage and teenage reproduction is the high likelihood that a teenage marriage was preceded by a premarital pregnancy or birth. Among all first marriages of adolescents between 1975 and 1979, 23 percent of the brides were pregnant and 10 percent had already borne at least one child.[1] On the other hand, teenage marriage prior to a conception is also likely to lead to early conception and childbirth. While it is possible to make national estimates comparing the rate of births to married teenagers resulting from marital conceptions (228 per 1,000 women aged 15–19 in 1981) with the rate of all births to married teenagers (351 per 1,000 in 1981),[2] there are no such data available at the state level. It is the lack of data with which to examine this two-way causality that confuses the interpretation of the relationship between teenage marriage and fertility and reduces the usefulness of the marriage variable itself.

Gregory Loken also questions the appropriateness of controlling for the 1970 birthrate and for the availability of abortion services because of the potential for overlap between family planning clinics and abortion service providers and because births and abortions occur after rather than before pregnancies. However, the analysis is premised on the hypothesis that high teenage pregnan-

(*Continued on page 90*)

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Premarital Sexual Activity Among U.S. Teenage Women Over the Past Three Decades

By Sandra L. Hofferth, Joan R. Kahn and Wendy Baldwin

Introduction

In the 1970s, there occurred a major transformation in sexual behavior in the United States. Although this transformation presumably affected the majority of Americans, it is among teenage women that the change has been best documented, and that the consequences have probably been most severe. There were two major aspects to the transformation: Women were becoming sexually active at younger and younger ages, and fewer teenagers were marrying. As a result, sexual activity among young women became primarily nonmarital or premarital.

These joint trends are very important because they resulted in an increasing proportion of female teenagers who were at risk of premarital pregnancy during the 1970s. It should be noted that the pregnancy rate among sexually active teenagers actually declined throughout the 1970s, probably as a result of increased use of contraception.[1] Yet because so many more teenagers had become sexually active, the overall pregnancy rate (the number of pregnancies per 1,000 women aged 15–19) increased substantially. Thus, the key to estimating and understanding recent trends in teenage pregnancy is an accurate estimate of trends in sexual activity.

Although pregnancy among married teenagers may also have adverse consequences, in this article we focus on *premarital* sexual activity among teenagers—that is, the sexual activity of unmarried teenagers and the premarital experience of married teenagers—because these young women run a substantial risk of having a premarital pregnancy and an out-of-wedlock birth.

> **"Estimates from the NSFG show that, at least as of 1982, there is no indication that the proportion of premaritally sexually active white teenagers has fallen. There is some . . . slowing of the rate of increase, which suggests a leveling off. . . . "**

Existing Knowledge

Estimates of the proportion of teenagers who had ever had premarital sexual intercourse were obtained in 1971, 1976 and 1979 in three National Surveys of Young Women (NSYW) conducted by the same principal investigators.[2] These surveys were the first to obtain the date of initial sexual experience from a nationally representative sample of teenagers, and thus were the first to provide national estimates of teenage sexual experience. The studies show a substantial increase between 1971 and 1979 in the sexual activity of both black and white teenagers. Among 15–19-year-old women living in metropolitan areas, the percentage reporting premarital sexual activity rose from 30.4 in 1971 to 43.4 in 1976 and to 49.8 in 1979, an increase of 64 percent over the period (see Table 1). Whereas the trend for whites was similar to that for teenagers as a whole, the trend for blacks was slightly different. The percentage of metropolitan-area black teenagers who were premaritally sexually active rose from 53.7 percent in 1971 to 66.3 percent in 1976, and leveled off at 66.2 percent in 1979.[3]

Teenagers were also asked about their age at first sexual experience in Cycle III of the National Survey of Family Growth (NSFG), conducted in 1982. According to these data, levels of sexual activity apparently declined between 1979 and 1982, though the decline was not statistically significant.* In 1982, an estimated 44.9 percent of all 15–19-year-olds living in metropolitan areas had ever had premarital intercourse.[4] As Table 1 indicates, the difference in levels of sexual activity between 1979 and 1982 is small for whites, but large for blacks. Whereas in 1982, 43.3 percent of white teenagers in metropolitan areas had ever had premarital sexual intercourse, compared with 46.6 percent in 1979, the level for blacks dropped from 66.2 percent in 1979 to 53.6 percent in 1982. This 12-point difference for blacks comes close to a 95 percent level of statistical significance.

Thus, data from the 1971, 1976 and 1979 rounds of the NSYW and findings from the 1982 NSFG suggest that sexual activity among white teenagers increased during the 1970s, and leveled off between 1979 and 1982. Among black teenagers, the data suggest, sexual activity rose during the early 1970s, leveled off between 1976 and 1979 and declined between 1979 and 1982.

Although knowledge of these trends is helpful in understanding patterns of adolescent pregnancy and fertility during the 1970s, a number of questions remain unanswered. How valid are these estimates, given that they come from four different surveys? Do the same trends emerge for the country

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*NSFG standard errors depend on two factors: the number of women in the group for which the percentage is estimated and the percentage estimated from the sample. The appendix table published in reference 7 provides approximate standard errors for percentages estimated for all women and for white women only. The standard error for a mean of 20 percent is 1.8 if there are 10 million women in the group; in contrast, it is 5.8 if the group contains only one million women (see Table 2). To be statistically significant at the 95 percent confidence level, the difference between two measures of sexual activity would have to be more than 12 percentage points for a group with only one million women in it, and there would have to be a mean of 20 percent sexually active, whereas the difference only has to be four percentage points in a group of 10 million women. The standard errors are slightly larger for black women. (See: C. A. Bachrach et al., "National Survey of Family Growth, Cycle III, Sample Design, Weighting and Variance Estimation," *Vital and Health Statistics*, Series 2, No. 98, 1985.)

as a whole, and not just for metropolitan areas? What were the patterns of teenage sexual activity prior to 1971? Did sexual activity increase similarly among the youngest as well as the oldest age-groups? Are levels of sexual activity now declining among teenagers of all ages?

In this article, we attempt the following: to assess the validity of the trends shown in Table 1 by using a single survey to generate cross-sectional estimates for earlier years and, thereby, estimates of national trends over the same period, to increase the length of the trend series, and to examine the trends by individual year of age. The survey we use is the 1982 NSFG, the estimates span the experience of birth cohorts that reached adolescence in the 1950s and that of cohorts now in their teenage years. We also examine changes in the likelihood of teenagers' becoming sexually active at different ages, net of the effects of background factors.

Cross-Sectional Estimates

Although the estimates obtained from the NSYW and from the NSFG are widely used by policy-makers, there are several reasons to believe that these surveys, when taken together, may not produce accurate estimates of trends in teenage sexual activity. Because of the sensitive nature of the topic, the questions about sexual activity may not have been answered truthfully. Thus, any trend identified across surveys may be spurious. Moreover, because these data were collected in four surveys by three different survey organizations, the data may differ as a result of study effects. Also, the moderate size of the samples resulted in large sampling variability, especially among blacks. Lastly, there were changes in the age composition of the teenage group over the study period, which may also affect the results.

The first two possibilities were tested in research in which responses to the question on age at first intercourse were compared among three different surveys.[5] The investigators found that both the 1982 NSFG and the 1979 NSYW provide consistent estimates of the timing of the transition to first intercourse for a cohort of teenagers eligible for both surveys (that is, those born between March 1959 and February 1964). The similarity of results from these two surveys suggests that neither study effects nor response error is a problem. However, the same comparison cannot be made across the three NSYW surveys, since there is very little overlap in the cohorts interviewed. Thus, it is not clear that the two earlier rounds of the National Surveys of Young Women provide reliable estimates over time. Furthermore, since the 1979 NSYW interviewed only young women from metropolitan areas, the NSYW can at best provide a series of estimates for urban teenagers, not for all U.S. teenagers.

However, another way to obtain cross-sectional estimates, which avoids the possibility of study effects, is to use retrospective reports of first sexual intercourse derived from a single survey, such as the National Survey of Family Growth. This can be done by taking older respondents back to the period when they were teenagers and determining whether by that time they had become sexually active. This approach has frequently been used to estimate trends in marriage and childbearing.[6] Using this technique, the cycles of the NSFG have provided estimates that are quite comparable to those generated from vital statistics.[7] Since it surveyed women aged 15–44, the 1982 NSFG can provide a lengthy time-series of cross-sectional estimates that are both nationally representative and unaffected by survey differences (since they are generated from a single survey).

Table 2 (see page 48) presents estimates from the NSFG of the proportion of 15–19-year-olds in 1971, 1976, 1979 and 1982 who had ever had premarital intercourse.* While the 1971 and 1976 national figures for white teenagers obtained from the 1982 NSFG are similar to those derived from the 1971 and 1976 rounds of the NSYW, for black teenagers they are lower (although in most cases, within two standard errors and, therefore, not significantly different). The NSFG estimates for both black and white teenagers living in metropolitan areas in 1979 (not shown) are also lower than the 1979 NSYW estimates for comparable teenagers. However, the national estimates from the NSFG lead to only slightly different conclusions regarding trends in sexual activity during the 1970s and early 1980s. In the first place, the trends have been more similar for whites and blacks than the National Surveys of Young Women indicate: Sexual activity rose for both blacks and whites between 1971 and 1979. In the second place, among whites there is no longer even an apparent decline between 1979 and 1982; rather, the proportion sexually active continued to increase after 1979, but at a slower rate. For blacks there was a decline in the proportion sexually experienced after 1979, but it was a much smaller decline than that depicted in Table 1.

The trends shown in Tables 1 and 2 are similar enough for us to conclude that there was a real increase in sexual activity among teenagers during the 1970s, followed by a slowing of the rate of increase among white teenagers and perhaps by a slight decline in the level among blacks. The differences among the survey results are small, given the

Table 1. Percentage* of U.S. metropolitan teenage women who had ever had premarital sexual intercourse, by race and age; 1971, 1976 and 1979 National Surveys of Young Women (NSYW) and 1982 National Survey of Family Growth (NSFG)

Race and age	Survey year			
	1971	1976	1979	1982
TOTAL	(N = 2,739)	(N = 1,452)	(N = 1,717)	(N = 1,157)
15–19	**30.4**	**43.4**	**49.8**	**44.9**
15	14.8	18.9	22.8	17.0
16	21.8	30.0	39.5	29.0
17	28.2	46.0	50.1	41.0
18	42.6	56.7	63.0	58.6
19	48.2	64.1	71.4	72.0
WHITE	(N = 1,758)	(N = 881)	(N = 1,034)	(N = 767)
15–19	**26.4**	**38.3**	**46.6**	**43.3**
15	11.8	14.2	18.5	15.4
16	17.8	25.2	37.4	27.3
17	23.2	40.0	45.8	39.4
18	38.8	52.1	60.3	56.3
19	43.8	59.2	68.0	70.4
BLACK	(N = 981)	(N = 571)	(N = 683)	(N = 390)
15–19	**53.7**	**66.3**	**66.2**	**53.6**
15	31.2	38.9	41.7	24.8
16	46.4	55.1	50.9	37.6
17	58.4	71.9	74.6	49.4
18	62.4	78.4	77.0	73.6
19	76.2	85.3	88.7	81.4

*In this and subsequent tables, percentages are based on weighted data and Ns are unweighted.

Sources: See reference 2, and unpublished tabulations from Cycle III of the NSFG.

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*To facilitate comparison with data from the NSYW, three hypothetical survey dates of February 1971, February 1976 and February 1979 were established. Three groups of respondents were selected from the 1982 NSFG—those who would have been 15–19 at these hypothetical survey dates. If the respondents' date of first intercourse was the same as or prior to that hypothetical date, and they either married after that date or had never married by 1982, these respondents were considered to have had premarital intercourse. Thus, the estimates shown in Table 2 are completely comparable to estimates from the three rounds of the NSYW surveys.

The NSFG included a special dormitory sample, whereas no such sample was included in the NSYW, and the behavior of the dormitory sample does differ from that of the household sample. Since we wanted comparable samples, such cases were dropped. As expected, the dormitory sample has a lower probability of being sexually active by exact age 20. Therefore, excluding the dormitory sample raises slightly the cumulative proportion sexually active in the late teenage years. However, this primarily affects white cohorts born between 1961 and 1964. In addition, the NSFG imputed values when data were missing on age at first intercourse. The inclusion of such cases has a small impact on the proportion sexually active. To make the data comparable to the NSYW data, such cases were dropped. For further comparability with the NSYW, we included only whites and blacks in the NSFG samples analyzed and presented here; young women of other races were excluded from the totals. Finally, a small number of cases were excluded from the analysis sample because they had missing values on other crucial variables. Such deletion does not affect the estimates of sexual activity.

Table 2. Percentage of U.S. teenage women who had ever had premarital sexual intercourse, by race and age, 1971–1982; calculated from the 1982 NSFG

Race and age	Year			
	1971	1976	1979	1982
TOTAL				
15–19	**31.7**	**39.0**	**43.4**	**45.2**
(Standardized)	(31.7)	(38.6)	(42.7)	(44.0)
15	14.6	10.8	1.9	18.6
16	23.5	26.4	27.1	30.0
17	30.7	37.4	47.0	41.8
18	36.9	54.0	54.4	57.8
19	54.0	65.8	64.8	73.4
Unweighted N	1,316	1,296	1,283	1,544
Weighted N (000s)	9,928	9,492	9,196	8,386
WHITE				
15–19	**29.2**	**36.2**	**40.8**	**43.1**
(Standardized)	(29.2)	(36.0)	(40.0)	(42.0)
15	13.5	8.9	20.1	16.8
16	20.8	24.7	24.0	28.1
17	27.9	34.2	5.3	38.6
18	33.2	50.1	49.5	55.4
19	51.6	62.7	62.1	71.8
Unweighted N	738	683	767	1,016
Weighted N (000s)	8,174	8,192	7,923	7,071
BLACK				
15–19	**51.2**	**56.1**	**61.2**	**56.5**
(Standardized)	(51.2)	(54.8)	(59.6)	(54.9)
15	22.7	23.2	33.1	27.9
16	45.1	37.3	45.2	40.0
17	51.9	57.1	58.1	56.4
18	68.1	78.3	85.7	73.7
19	73.3	85.0	81.8	82.5
Unweighted N	578	613	516	528
Weighted N (000s)	1,054	1,300	1,273	1,315

differences in survey methods and the large sampling errors for blacks. The small differences between the NSFG and NSYW estimates may simply be due to sampling variability, and not to any systematic bias.

It is possible that some of the changes over time can be attributed to shifts in the age composition of the teenage population. By the later periods, we would expect an increasing proportion of older teenagers, since the overall number of teenagers was dropping, as a result of the replacement of large cohorts by successively smaller ones during the 1960s. If this change were large enough, it could artificially inflate the proportion of sexually active teenagers, since the total would tend to reflect the greater sexual experience of older adolescents. When the proportion of sexually active teenagers in 1976, 1979 and 1982, as calculated from the NSFG, is standardized on the 1971 age distribution, it drops slightly, reflecting this change in the age composition of teenagers (see Table 2). However, the impact is minimal. Standardizing on the 1971 age distribution lowers the percentage sexually active in 1982 to 42.0 among white teenagers, to 54.9 among blacks, and to 44.0 among all teenagers. Since the 1976 and 1979 figures would also be lowered, the trend between 1971 and 1982 would not change much, but the curve for both races would be slightly flattened.

In sum, our estimates of the proportion of teenagers who were sexually experienced in 1971, 1976, 1979 and 1982, obtained from the 1982 NSFG and from the 1971, 1976 and 1979 NSYW, lead us to conclude that among whites, the proportion increased during the 1970s and leveled off somewhat during the early 1980s. Among blacks, the level rose during the 1970s and then declined somewhat between 1979 and 1982. Finally, changes in age composition do not explain increased levels during the 1970s.

Birth Cohort Analysis

Although cross-sectional estimates provide useful information on the proportion of teenagers currently at risk of premarital pregnancy, they contain a number of drawbacks. During a period of rapid change we cannot assume that the experience of a cross-section of 15–19-year-olds will accurately reflect the cumulative experience of any given cohort. Although we can examine each age-group separately, the sample sizes become small when we do so, thus producing imprecise estimates because of relatively large sampling variability. Furthermore, experiences at each age are censored[*] by the survey date and, therefore, produce underestimates of sexual activity. Finally, as already noted, cross-sectional estimates are affected by the changing age composition of the population. In fact, changing age composition caused the estimates of sexual experience among 15–19-year-olds to be somewhat inflated, since birthrates were declining when today's teenagers were born.

Another way of approaching the data is to examine the experience of different birth cohorts as they pass through their teenage years. By using retrospective reports of age at first intercourse, we can compare the experience of successive birth cohorts and thereby determine the extent of change over time. Although the reports of women 15–19 are still censored, cohorts that have completed their teenage years provide estimates of trends, and these help us extrapolate to current cohorts. In using retrospective reports, we are still faced with the potential problem of recall bias, and the longer the recall period, the greater the potential for misreporting. Yet the extensive comparisons made between the 1982 NSFG and the 1971, 1976 and 1979 rounds of the NSYW suggest substantial correspondence among estimates of sexual experience at each age, even though the NSFG estimates are based on recall over a period as long as 11 years.[†]

Since the NSFG interviewed women who were 15–44 in 1982, we were able to construct a series of three-year birth cohorts covering the years between 1938 and 1967. Combining single-year cohorts provides a larger number of teenagers in each age-group, thereby improving the stability of the estimates. We can then calculate, by exact age, the proportion of each cohort that was sexually active before marriage. The resulting estimates reflect only the experience of teenagers who have reached the age specified. Because the NSFG asked the exact month of first marriage and first intercourse, the relative timing of marriage and intercourse can be determined even if both occurred at the same age. Thus, a young woman would have had premarital intercourse if the date of her first sexual experience occurred prior to the date of her first marriage.

The birth cohorts in question reached their teenage years between the 1950s and the early 1980s. The 1938–1943 cohorts were teenagers mainly during the 1950s; the 1944–1952 cohorts, mostly during the 1960s; the 1953–1961 cohorts, during the 1970s; and the 1962–1967 cohorts, during the early 1980s. The most recent birth cohorts, those born in 1962–1964 and 1965–1967, were still in their teenage years at the time of the 1982 survey. In order for the results not to be biased by the fact that some members of these recent cohorts had not completed a given year of age, we report data only for those ages that all cohort members had completed: up to exact age 18 for the 1962–1964 cohort, and up to exact age 15 for the 1965–1967 cohort.

Cumulative Proportions

Table 3 shows the cumulative proportion of teenagers who were premaritally sexually active, by each exact age, for the three-year cohorts born between 1938 and 1967. The table reveals that the cumulative rates are consistently higher for black teenagers than

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[*] The teenagers were, on average, halfway through their current year of age when interviewed. Many would have experienced first intercourse before they reached their next birthday. As a result, estimates of their sexual experience are "censored" by the survey date and are, therefore, underestimates of the experience of all teenagers who have completed that age.

[†] If the pattern of misreporting is random (and we have no evidence to the contrary), the estimates should not be biased.

Table 3. Cumulative percentage of U.S. teenage women who had ever had premarital sexual intercourse by each exact age, according to race and birth cohort; calculated from the 1982 NSFG

Race and age	Birth cohort									
	1938–1940	1941–1943	1944–1946	1947–1949	1950–1952	1953–1955	1956–1958	1959–1961	1962–1964	1965–1967
Total	(N=383)	(N=444)	(N=479)	(N=664)	(N=745)	(N=805)	(N=786)	(N=707)	(N=897)	(N=848)
13	0.9	0.3	0.3	0.9	0.4	0.5	1.3	2.0	0.9	1.9
14	2.1	0.8	1.1	2.8	0.8	3.0	3.6	4.0	4.0	5.9
15	3.0	2.5	2.2	4.6	3.1	6.3	8.7	9.2	9.8	12.6
16	7.4	7.4	7.1	10.1	6.6	14.5	17.9	18.9	23.1	†
17	14.0	14.3	13.2	19.0	13.8	26.4	28.3	33.0	37.8	†
18	23.0	22.7	22.6	29.3	26.9	43.1	45.5	46.4	54.0	†
19	32.2	33.3	31.7	40.2	42.6	58.8	58.8	61.5	†	†
20	38.9	39.1	40.8	48.9	55.9	68.4	68.2	68.3	†	†
White	(N=235)	(N=273)	(N=296)	(N=393)	(N=422)	(N=449)	(N=405)	(N=385)	(N=599)	(N=538)
13	0.5	0.2	0.0	0.9	0.0	0.3	1.0	1.7	0.3	1.7
14	1.3	0.6	0.3	2.4	0.3	2.8	3.0	3.0	3.4	5.0
15	1.3	2.0	1.0	3.7	2.2	5.6	7.6	7.9	8.3	11.0
16	4.5	6.3	5.1	8.6	4.6	12.9	16.1	16.8	20.8	†
17	10.2	10.9	10.7	17.0	11.2	24.0	25.6	29.9	34.8	†
18	18.4	18.5	19.1	27.2	23.4	39.6	42.5	43.0	50.9	†
19	27.2	28.3	27.6	37.2	38.7	55.5	55.2	58.4	†	†
20	33.3	34.2	37.0	45.6	52.5	65.5	64.9	65.3	†	†
Black	(N=148)	(N=171)	(N=183)	(N=271)	(N=323)	(N=356)	(N=381)	(N=322)	(N=298)	(N=310)
13	4.3	1.4	2.7	0.5	3.5	1.5	3.0	4.0	4.6	3.2
14	8.5	2.3	8.0	5.5	5.5	4.5	7.6	10.0	7.9	10.5
15	15.7	6.9	13.2	12.1	10.5	11.0	15.3	18.0	19.4	20.4
16	28.9	16.3	23.5	21.6	22.0	27.0	29.3	32.1	37.0	†
17	42.7	41.8	33.9	34.1	33.0	44.8	44.5	52.8	57.3	†
18	57.8	56.3	51.9	45.1	54.5	69.2	64.0	68.6	73.1	†
19	70.6	73.0	66.3	62.2	73.6	83.1	81.0	81.4	†	†
20	81.7	77.9	73.9	74.2	83.1	90.4	88.8	87.7	†	†

† In this and subsequent tables, data censored by the survey date.

for whites, and that the differences increase with age.* However, even more noteworthy, perhaps, is the fact that the trends for blacks and whites are generally parallel for the cohorts born after the late 1940s (the minor fluctuations are probably due to sampling variability). Both groups experienced an upward trend in the proportion sexually active by the 14th and 15th birthdays.† Among whites, the proportion sexually active by their 15th birthday increased from 2.0 percent among the 1950–1952 birth cohort to 11.0 percent among the 1965–1967 birth cohort. Among comparable black cohorts, the proportion increased from 10.5 percent to 20.4 percent.

Although the table reveals a larger relative increase in levels of sexual experience at younger ages, the absolute changes are more pronounced among the older teenagers, and the increase apparently began slightly earlier. Comparing the proportion who had become sexually active by exact age 18 in the 1947–1949 cohort and in the 1962–1964 cohort we find an increase from 27.2 percent to 50.9 percent among whites, and an increase from 45.1 percent to 73.1 percent among blacks. For the three recent cohorts, increased rates of sexual activity at every age up to age 18 show no sign of slowing down. However, among both white and black teenagers, sexual activity levels off by ages 19 and 20 for the two most recent cohorts (that is, women born after 1955). This finding implies that by the late 1970s, the proportion of teenagers who had ever had sexual intercourse by age 20 was no longer increasing. The level seems to have stabilized at about 65 percent for whites, and at about 88 percent for blacks.

There is one exception to the generally similar pattern for blacks and whites. Although black women born since 1949 have experienced increases in sexual activity that parallel those of whites, these increases seem to have altered the direction of what may have been a slight decline among previous black cohorts. Levels of premarital sexual activity among blacks who became teenagers during the 1950s (that is, the 1938–1946 birth cohorts) were relatively high at all ages. Almost nine percent of the 1938–1940 cohort had experienced first intercourse by age 14, and 81.7 percent had done so by age 20. These proportions are comparable to those reached by women in the 1950–1952 birth cohort, who entered their teenage years during the mid-1960s.‡ In contrast, among older whites particularly, there has been a consistent increase in levels of teenage sexual activity since at least the 1938–1940 birth cohort.

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*The increasing differential should not be surprising, given the accumulation of experience with age. That is, since proportionately more blacks than whites become sexually active at each age, the difference in the cumulative proportion ever active should increase with age. Hence, by later ages, black-white differences are much larger than they are for earlier ages.

†There is no comparable trend in sexual experience by exact age 13 over the period of the study. This is because an unknown but probably major proportion of such experience consists of nonvoluntary intercourse (sexual abuse, incest and rape). The numbers of individuals involved are very small, and there is a lot of noise and error in the estimates at this age, with resulting large standard errors.

‡It could be argued that the 1938–1940 cohort had unusually high levels of early sexual activity, which could artificially inflate the cumulated values. However, even if this is the case, it does not explain why the levels of sexual experience among the 1941–1943 and 1944–1946 cohorts are also higher than those of the 1947–1949 cohort.

Table 4. Among U.S. teenage women, unadjusted probability[*] of having first premarital sexual intercourse at specific ages, by race and birth cohort; calculated from the 1982 NSFG

Race and age	Birth cohort										
	Total	1938–1940	1941–1943	1944–1946	1947–1949	1950–1952	1953–1955	1956–1958	1959–1961	1962–1964	1965–1967
White	(N = 3,978)	(N = 234)	(N = 272)	(N = 296)	(N = 393)	(N = 422)	(N = 449)	(N = 403)	(N = 379)	(N = 597)	(N = 533)
12–13‡	2.1	0.8	0.5	0.3	2.5	0.3	2.8	2.5	2.1	3.2	4.7
14‡	3.1	0.0	1.4	0.7	1.2	1.9	2.9	4.8	5.0	5.0	6.4
15	7.3	3.3	4.4	4.3	5.1	2.5	7.7	9.2	9.8	13.7	12.5
16	10.6	6.1	5.0	6.1	9.4	7.0	12.8	11.5	16.0	17.7	13.3
17	16.1	9.3	9.1	9.9	12.6	14.1	20.9	22.8	19.1	24.7	†
18	19.9	11.4	13.4	11.8	14.4	21.7	28.0	22.9	28.3	29.9	†
19	19.2	10.6	10.6	16.4	15.8	27.3	27.6	24.7	18.7	†	†
Black	(N = 2,738)	(N = 147)	(N = 170)	(N = 183)	(N = 270)	(N = 319)	(N = 354)	(N = 378)	(N = 317)	(N = 293)	(N = 307)
12–13‡	6.4	6.1	2.0	8.0	5.3	4.7	4.0	7.1	9.0	5.1	10.2
14‡	8.2	7.9	4.7	5.6	7.0	5.3	6.8	8.4	8.9	12.5	11.1
15	15.8	15.7	10.3	12.0	10.8	12.8	18.0	16.5	17.2	21.9	18.1
16	23.0	19.6	31.0	13.8	15.9	15.4	24.4	21.5	30.4	32.2	21.1
17	31.4	26.7	25.6	28.9	16.8	31.1	44.1	35.4	33.8	36.2	†
18	39.9	31.1	40.7	33.4	32.6	43.1	45.7	48.1	41.4	40.2	†
19	35.5	39.6	21.0	27.4	34.3	37.8	43.4	42.8	35.3	†	†

[*] In this and Table 5, probabilities are based on weighted data; the numbers have been multiplied by 100.

†See dagger (†) in Table 3. ‡Based on a small number of cases, particularly for whites born 1938–1952.

Note: In this and Table 5, Ns represent the total number of unmarried respondents who had not had intercourse at exact age 12. Because the respondents drop out of the life-table (either by marrying or by having first intercourse), the Ns vary with age.

Thus, the very high levels of premarital sexual activity observed among black teenagers may have been falling toward the levels seen among young white women born between the late 1930s and the late 1940s. Subsequent cohorts of both races experienced increased levels of premarital sexual activity during the 1960s and early 1970s. Among whites, twice as many teenagers born in 1953–1955 as of those born in 1938–1940 had experienced sexual intercourse by age 20 (65.5 percent vs. 33.3 percent—a 97 percent increase). Among blacks, because the levels of sexual activity were already high, the increase was not as sharp as that seen among whites. Almost 82 percent of black teenagers born in 1938–1940, compared with 90.4 percent of those born in 1953–1955, had experienced premarital sexual intercourse by the exact age of 20—an increase of only 11 percent.

In sum, the most pronounced increase in teenage sexual activity occurred among young women who entered their adolescent years during the 1960s and early 1970s (that is, cohorts born after the late 1940s). Among cohorts maturing during the 1970s, levels of sexual experience by exact age 18 continued to rise, although a leveling off occurred by exact ages 19 and 20. Both black and white teenagers experienced a pattern of increasing sexual activity during the late 1960s and early 1970s. However, for blacks this trend followed a pattern of somewhat declining rates among women born between 1938 and 1949. Indeed, the level of premarital sexual activity among black teenagers was already very high prior to the sexual revolution.

Transition to First Intercourse

Cumulative analysis provides other valuable information about changes in patterns of premarital sexual activity over the past 30 years. Unlike the cross-sectional estimates, which show a leveling off or decline in recent years, the cumulative rates show that women in the more recent birth cohorts are more likely than earlier cohorts to be sexually active at all ages. How has a young woman's likelihood of initiating sexual activity at each age changed over the past three decades? Are the trends similar for blacks and whites? Can these trends be attributed to changes in other factors associated with the transition to first intercourse?

In order to focus on the timing of first premarital intercourse, we examine young women's likelihood, at different ages, of making the transition to sexual activity. We use an age-specific life-table approach[*] to chart this transition. We first examine trends in the transition to first premarital intercourse at different ages. We then examine the same trends independently of the effects of mother's education, religious affiliation, family stability during adolescence and age at menarche.[†] The data in this part of the analysis again come from the 1982 NSFG,[‡] and the cohorts used are the same as in the preceding section (coded as a series of dummy variables).

This approach, which has been used in other studies to evaluate the effects of sex education programs on sexual and contraceptive behavior,[5] provides a more precise measure of the transition to sexual activity than does the cumulative measure because it focuses on the behavior, at different ages, of girls not yet sexually experienced. The difference between the cumulative proportions active at two ages gives the proportion of all teenagers who became active during that age interval. in contrast, the transition probability equals the proportion of sexually inexperienced teenagers who become active at a given age, which is a more accurate reflection of the risk of becoming sexually active. Furthermore, by including selected control variables in the analysis, we are able to assess the statistical significance of the trend, as well as the sensitivity of the trend to the effects of background characteristics.

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[*] We divide the ages between 12 and 19 into one-year intervals. (At the youngest ages, the interval is two-years wide because the single-year rates are so low.) For each interval, we calculate the probability of first premarital intercourse among those at risk (that is, young unmarried women who have not had sexual intercourse at the start of the interval). Respondents who are still teenagers at the time of the survey are included only in intervals they have completed (that is, an 18-year-old is not included in either interval 18 or interval 19). The dependent variables are thus dichotomies for each interval indicating whether first intercourse has occurred at that age (12–13, 14, 15, etc.). We then model these probabilities as a function of a series of explanatory variables using logistic regression. The logistic regression approach was selected over a hazards model because of our primary interest in the patterns of effects, which were anticipated to vary substantially with age.

[†] The relationship between age at menarche and transition to first intercourse cannot be tested with these data, since the NSFG only asked for age at first intercourse after menarche. A strong negative relationship is expected, because of the decreased duration of exposure to first intercourse among those whose menarche occurred at an older age.

[‡] The sample consists of whites and blacks aged 15–44 in 1982 who were not part of the dormitory sample and who had no imputed responses on the question on age at first intercourse, as well as no missing data on any variables in the analysis (see footnote [*], page 47).

Results

The simple unadjusted transition probabilities are presented in Table 4. Each measure can be interpreted as the probability that an unmarried teenager with no sexual experience at a given age (x) will have first premarital intercourse before reaching that age plus one year (x + 1). The sample for each age interval is limited to respondents who are at least age x + 1, so that no one's experience is censored by the interview date.

Reading down the columns in Table 4, we see that as young women who have not yet had sexual intercourse pass through their teenage years, they face an increasing risk of becoming sexually active. This pattern holds for whites and blacks in all cohorts through at least age 18. However, for the white cohort born in 1959–1961 and for the black cohorts of 1950–1961, we find a decline in this risk between the ages of 18 and 19. This finding might be explained by the fact that with increasing rates of teenage sexual activity, a far smaller proportion of recent cohorts remain sexually inactive until age 19. As a more select group, the women who have not yet had intercourse may be more inclined not to do so until marriage, or they may have fewer opportunities to become sexually active. Among whites in the 1959–1961 birth cohort, the average risk of first intercourse drops substantially, from 28.3 at age 18 to 18.7 at age 19. Among blacks born since 1950, the comparable risk drops by 2–6 points, probably because at least 70–80 percent have already had sexual intercourse by exact age 19 (see Table 3).

As we saw with the cumulative rates, black teenagers face higher risks of first intercourse at every age than do white teenagers. However, among the more recent cohorts, the racial differential is reduced. For example, in the 1938–1940 cohort, blacks were 2.7 times as likely as whites to have first sex at age 18; in contrast, in the 1962–1964 cohort, blacks were only 1.3 times as likely to do so. Looking across the rows of Table 4, we see that this convergence between the races can be attributed to the increased risks faced by the more recent white cohorts, and to the somewhat reduced risks faced by the more recent black cohorts. Whereas only 11.4 percent of white 18-year-olds born in 1938–1940 had first premarital sex before reaching age 19, 30.0 percent of those born in 1962–1964 did so. For blacks in comparable cohorts, this proportion increased from 31.1 percent to 40.2 percent. Black rates clearly started at higher levels than did white rates for the earliest cohorts. Although at the younger ages the risk among blacks increases consistently, at the older ages the rates seem to have peaked among young women born between 1953 and 1958, and to have declined somewhat thereafter. We see a similar decline for whites only for 19-year-olds in the cohorts born after 1958.

What is the statistical significance of these trends in teenage sexual activity? How much of these trends can be explained by cohort differences in social and family background? To address these questions, we regress the transition probabilities on a series of cohort dummy variables and on four covariates: mother's education, religious affiliation, age at menarche and family stability at age 14.

The results of the logistic regressions can be found in the appendix table (see page 53). All of the tests of significance are based on standard errors that have been corrected for the complex sample design of the survey.[9] The coefficients for the cohort dummy variables reveal contrasts with the earliest cohort, namely, respondents born between 1938 and 1940. As the table shows, the upward trend across cohorts is considerably more significant for whites than it is for blacks. The lack of a significant trend for blacks may be attributable in part to unusually high transition probabilities for the 1938–

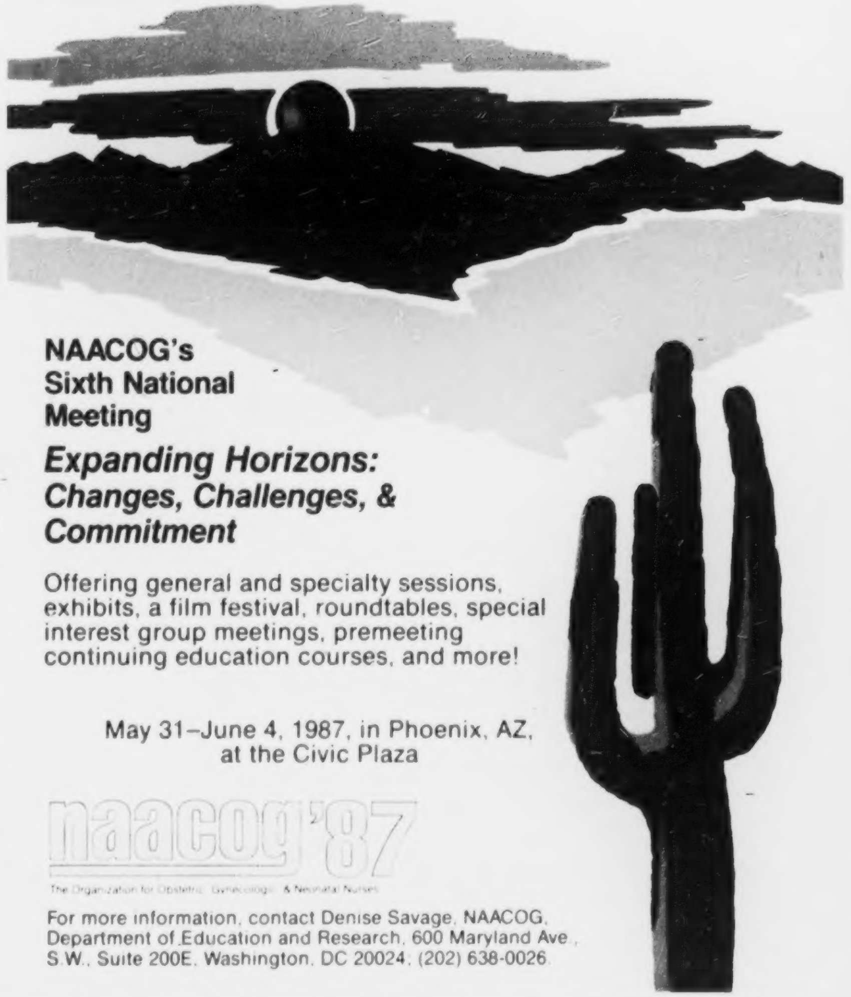

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Table 5. Among U.S. teenage women, predicted probability* of having first premarital sexual intercourse at specific ages, by race and birth cohort;‡ calculated from the 1982 NSFG

Age and race	Birth cohort										
	Total	1938–1940	1941–1943	1944–1946	1947–1949	1950–1952	1953–1955	1956–1958	1959–1961	1962–1964	1965–1967
White	(N = 3,978)	(N = 234)	(N = 272)	(N = 296)	(N = 393)	(N = 422)	(N = 449)	(N = 403)	(N = 379)	(N = 597)	(N = 533)
12–13	1.5	0.5	0.3	0.2	1.8	0.2	2.2	2.0	1.7	2.9	3.7
14	2.4	0.5	0.5	0.6	1.0	1.4	2.4	3.9	4.8	4.3	5.5
15	6.8	2.7	3.9	4.0	4.6	2.0	7.0	8.5	10.0	13.2	11.7
16	10.2	5.6	4.7	6.0	9.1	6.5	12.6	11.5	16.6	18.0	13.6
17	15.4	9.0	9.0	9.9	12.6	13.8	21.1	22.9	19.6	24.9	†
18	18.6	10.4	12.7	11.3	13.9	21.3	28.2	23.1	29.7	30.1	†
19	18.2	10.8	11.1	16.7	16.5	27.5	28.4	25.0	19.6	†	†
Black	(N = 2,738)	(N = 147)	(N = 170)	(N = 183)	(N = 270)	(N = 319)	(N = 354)	(N = 378)	(N = 317)	(N = 293)	(N = 307)
12–13	5.2	5.5	1.7	6.9	4.6	3.7	3.1	5.8	6.9	4.8	8.2
14	7.5	7.7	4.4	5.2	6.4	5.0	6.2	8.1	8.1	12.5	10.3
15	15.4	15.3	9.5	11.5	9.9	12.4	17.6	16.9	17.1	21.9	17.9
16	22.2	19.4	30.0	13.2	15.1	15.2	24.1	22.0	31.3	33.2	22.8
17	30.3	24.4	24.1	27.0	16.0	30.4	43.5	34.7	33.1	36.0	†
18	39.9	28.1	36.6	31.0	31.3	41.8	44.7	48.0	43.7	40.9	†
19	36.1	36.4	18.3	25.3	34.0	36.9	43.2	45.8	39.2	†	†

*See asterisk (*) in Table 4 †See dagger (†) in Table 3 ‡Adjusted for covariates

1940 cohort, thus reducing the magnitude of the contrast. However, the lack of trend persists even when the 1941–1943 cohort is the omitted category.

To examine the impact of changes in social and family background on trends in sexual activity, we calculated predicted transition probabilities that are net of the effects of mother's education, family stability at age 14, religious affiliation and age at menarche.* These results are presented in Table 5. The striking similarity between the unadjusted probabilities (Table 4) and the probabilities adjusted for the covariates (Table 5) indicates that the changing social composition of consecutive cohorts does not explain the substantial increase in the risk of sexual activity. Whether or not background characteristics are taken into account, black teenagers still face higher risks of becoming sexually active than do white teenagers, older teenagers face higher risks than do younger teenagers, and recent cohorts face higher risks than do earlier cohorts. Similarly, the increase over time has been greater for whites, who start with low levels of sexual activity in the earliest cohorts and reach moderately high levels in the more recent cohorts. Among blacks, levels of premarital sexual experience for the earliest cohorts were already high, and they increased only modestly for the most recent cohorts. These last cohorts show evidence of a slight decline in the risk of first intercourse at some ages, but the decline is not statistically significant.

In sum, the results from the regression analyses generally confirm the findings of the cumulative distributions. There was an increase in premarital sexual activity among both white and black teenagers at all age levels, especially among those born during the 1950s. The data indicate continued increases at the younger ages (12–14), and possible declines at the older ages, although these declines are not statistically significant. There may have been some decline in the probability of first intercourse for the black cohorts born between 1938 and 1949, however, the pattern is not nearly as pronounced as it is in the cumulative distributions. Yet the fact remains that black women born in 1938–1940 had high probabilities of being sexually active before marriage.

Discussion

Among white U.S. teenagers, the proportion who were sexually experienced increased significantly among young women who entered adolescence during the late 1960s and early 1970s. The increase in sexual activity apparently occurred first among teenagers aged 18–19, but soon spread to younger adolescents. There was also a statistically significant increase in the predicted probability of first intercourse at ages 14–19, beginning with the cohort born in 1953–1955. Transition probabilities remained significantly higher than those of the 1938–1940 cohort for all cohorts up to and including the most recent (1965–1967).

Among blacks, the pattern was somewhat different. Although blacks experienced an increase in sexual activity similar to that of whites, the increase for black women who were born in the late 1950s was not as large, apparently because levels were already high for those born in the 1940s. The increase experienced by black women born in the 1950s was relatively small. There was a decline in cumulative levels of sexual activity among young black women born in 1947–1949 when compared with the levels of those born in the late 1930s. The decline was followed by modest increases for the next two cohorts.

Has the proportion of sexually experienced teenagers dropped? The cross-sectional estimates from the NSFG show that, at least as of 1982, there is no indication that the proportion of premaritally sexually active white teenagers has fallen. There is some apparent slowing of the rate of increase, which suggests a leveling off in the rate. For black teenagers, there is a small and nonsignificant decline in premarital sexual activity between 1979 and 1982. The cumulative estimates show that among both whites and blacks, teenagers continue to become sexually experienced at younger and younger ages, and any decline observed in levels of sexual activity is limited to adolescents in the older age-groups. Finally, the results of the transition analysis suggest that there have been small and nonsignificant declines in the probability of first intercourse at ages 18 and 19 for women born in 1956–1961 and at ages 15 and 16 for the most recent birth cohort (1965–1967). Whether these findings signal larger declines in sexual activity is not certain, given the substantial amount of fluctuation in probabilities.

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*Predicted transition probabilities are obtained by evaluating the regression line for each birth cohort (that is, the predicted logarithm of the odds that first intercourse will occur), holding the explanatory variables constant at their means and transforming the log-odds back into probabilities.

Yet the fact remains that more and more young teenagers, especially those under age 16, are becoming sexually active. Although they may not be involved in regular and frequent sexual activity, these young women face extremely high risks of unintended pregnancy, primarily because of their slow adoption of contraception after first intercourse. For example, the 1982 NSFG shows that only 23 percent of women under age 15 at first intercourse, compared with 53 percent of those aged 18–19, started using a contraceptive method within the first month after sexual debut; 42 percent delayed contraceptive use for more than a year (compared with 15 percent of those aged 18–19).[10] Pregnancy prevention efforts targeted at the very youngest teenagers can have a potentially greater impact than those targeted at older teenagers. Apparently, by ages 18–19, the majority of those who are going to have sex early have done so, and their risk of pregnancy is lower as well.

In sum, there was indeed a sexual revolution in the late 1960s and in the 1970s, as levels of sexual experience increased among both black and white teenage women. While older teenagers were at the forefront of that increase, they are also at the forefront of what has perhaps become a leveling off in rates of premarital sexual activity, with these rates standing at new higher levels. However, young teenagers are apparently still continuing to engage in intercourse at early ages and in increasing proportions. It is still too early to predict whether the likelihood that U.S. teenage women become sexually active at the youngest ages will eventually level off or decline.

Appendix table. Logistic regression of the likelihood of first premarital intercourse at each exact age on birth cohort; and on four background variables; calculated from the 1982 NSFG

Cohort and background variable	12–13	14	15	16	17	18	19
BIRTH COHORT							
White	(N = 3,978)	(N = 3,886)	(N = 3,590)	(N = 3,149)	(N = 2,575)	(N = 1,987)	(N = 1,321)
1938–1940	‡	‡	‡	‡	‡	‡	‡
1941–1943	−0.490	‡	0.380	−0.180	0.000	0.220	0.022
1944–1946	−0.950	−0.041	0.420	0.082	0.110	0.089	0.500
1947–1949	1.230	0.610	0.570	0.530	0.370	0.330	0.480
1950–1952	−1.070	0.920	−0.280	0.160	0.480	0.840***	1.140***
1953–1955	1.420*	1.500**	1.000**	0.900**	0.990***	1.220***	1.180***
1956–1958	1.320	2.000***	1.210***	0.790*	1.100***	0.950***	1.010***
1959–1961	1.200	2.210***	1.400***	1.220***	0.900**	1.290***	0.700*
1962–1964	1.700*	2.100***	1.710***	1.310***	1.210***	1.310***	†
1965–1967	−1.970**	−2.360***	−1.570***	−0.980**	†	†	†
Black	(N = 2,738)	(N = 2,556)	(N = 2,255)	(N = 1,842)	(N = 1,332)	(N = 859)	(N = 477)
1938–1940	‡	‡	‡	‡	‡	‡	‡
1941–1943	−1.200*	−0.590	−0.540	0.580	−0.011	0.390	−0.940*
1944–1946	0.250	−0.420	−0.330	−0.460	0.140	0.140	−0.530
1947–1949	−0.190	−0.190	−0.500	−0.310	−0.520	0.160	−0.110
1950–1952	−0.430	−0.450	−0.240	−0.290	0.300	0.610	0.019
1953–1955	−0.610	−0.220	0.170	0.280	0.870*	0.730	0.290
1956–1958	0.052	0.059	−0.120	−0.160	−0.500	−0.860*	0.390
1959–1961	0.240	0.055	0.130	0.640**	0.430	0.690	0.120
1962–1964	−0.150	0.540	0.440	0.730**	0.560	0.570	†
1965–1967	0.430	0.330	0.190	0.210	†	†	†
BACKGROUND							
White	(N = 3,978)	(N = 3,886)	(N = 3,590)	(N = 3,149)	(N = 2,575)	(N = 1,987)	(N = 1,321)
Mother's education	−0.042	−0.086**	−0.040	−0.046*	−0.015	−0.047**	0.049**
Religious background	−0.480	−0.700***	−0.210	−0.260	−0.250*	−0.590***	−0.260
Age at menarche	−0.440***	−0.150**	−0.210***	−0.047	0.013	0.073*	−0.031
Family stability	§	−0.950***	−0.840***	−0.390**	−0.400***	−0.520***	−0.420***
Constant	−0.870	−1.400	−0.220	−1.310	−1.890	−1.890	−1.870
Black	(N = 2,738)	(N = 2,556)	(N = 2,255)	(N = 1,842)	(N = 1,332)	(N = 859)	(N = 477)
Mother's education	−0.037	−0.064**	−0.065**	−0.060**	−0.025	−0.070***	−0.085**
Religious background	0.240	0.360	−0.140	−0.340	0.044	−0.430	−0.430
Age at menarche	−0.430***	−0.220***	−0.088***	−0.066*	0.099**	0.071	0.006
Family stability	§	−0.440**	−0.520***	−0.350*	−0.087	−0.006	−0.006
Constant	2.830	1.120	0.400	0.270	−2.050	−1.202	0.340

*p< 0.10. **p< 0.05. ***p< 0.01. †See dagger (†) in Table 3. ‡Omitted variable.

§Variable not included in this model.

Note: Standard errors used in significance tests were corrected for complex sample design. (See reference 5.)

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Family Planning Clinic Services
In U.S. Counties, 1983

By Aida Torres and Jacqueline Darroch Forrest

Summary

Organized family planning clinics are a major source of contraceptive services for low-income women, who are less likely than higher income women to be using a contraceptive method. A 1983 study estimated that 9.5 million U.S. women with family incomes below 150 percent of poverty were at risk of unintended pregnancy, and identified a network of 5,106 clinics providing them with services. Seventy-six percent of all counties in the United States have organized clinics that offer family planning services; almost all of those without services are nonmetropolitan counties. An estimated 52 percent of low-income women at risk of unintended pregnancy were served by organized family planning clinics in 1983, while the rest either went unserved or sought care elsewhere. Ten percent of low-income women not served by clinics live in counties that have no family planning clinics, but 67 percent live in counties where existing clinics reach fewer than half of potential low-income patients. More sites may be needed, particularly in counties without clinics, to effectively serve low-income women at risk of unintended pregnancy. However, since the majority of unserved women live in counties where at least one clinic exists, coverage might be improved through increased accessibility and outreach.

Introduction

Organized family planning clinics throughout the United States provide contraceptive information, counseling, methods and prescriptions to large numbers of low-income women (those whose family income is below 150 percent of the federal poverty index*).

Forty-six percent of low-income women who made a family planning visit in 1979–1982 attended a clinic, compared with 23 percent of women with higher incomes.[1] This greater use of clinics by low-income women reflects what has been a major goal of organized family planning programs: to provide contraceptive services to women who cannot afford to obtain them in the private sector.[2]

During 1983 (the last year for which data are available), almost five million women received contraceptive services from family planning clinics; an estimated 83 percent of these patients were low-income women. Almost all of the clinics received federal, state and local subsidies for the services they provided.[3]

Despite the large number of low-income women served by family planning clinics, poor women in general are less likely than nonpoor women to use contraceptives. Eighteen percent of low-income women at risk of unintended pregnancy were not using a contraceptive method in 1982, compared with 10 percent of higher income women.[4] One focus of efforts to improve contraceptive use must be on the clinic system, since it is a major source of care for low-income women.

Since 1971, The Alan Guttmacher Institute (AGI) has been collecting data on the network of family planning clinics in the United States. The latest study presented findings on 2,462 agencies involved in the delivery of family planning clinic services at more than 5,000 sites in 1983.[5] This article uses data from that study to examine the availability of and the need for organized family planning services at the county level.

A detailed discussion of the methodology used in collecting the 1983 data has been presented elsewhere.[6] Women at risk of unintended pregnancy, and, therefore, considered to be in need of family planning services, are defined as those women of reproductive age who are sexually active, fecund, not intentionally pregnant and not trying to become pregnant. The number of women at risk has been estimated on the basis of data from national surveys of fecundity and fertility-related behavior and county-level population estimates. Estimates of the number of women at risk at the county level are for 1981, the most recent period for which data are available.

Estimates of the number of clinic patients served by organized family planning programs in 1983 are based primarily on data from individual state and local reporting systems, many of which process data to conform to the Bureau of Community Health Services Common Reporting Requirements. The 47 data systems included in the AGI study covered hospitals, health departments, Planned Parenthood affiliates and other agencies providing family planning services (community action groups, neighborhood health centers, women's health centers, family planning councils and nursing services). The data systems accounted for nearly 80 percent of all family planning clinic patients served in 1983. The remaining patients were accounted for by an AGI survey of family planning agencies that did not report to any of the systems; the AGI projected data for about two percent of patients served by agencies known to be active but for which 1983 data were unavailable.

Women and Clinics

An estimated 9.5 million U.S. women with family incomes below 150 percent of poverty are at risk of unintended pregnancy, as shown in Table 1. The majority of these women—approximately seven million—live in 725 metropolitan counties, and the remaining 2.5 million live in 2,410 nonmetropolitan counties. Fifty-three percent of the low-income women at risk of unintended pregnan-

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*In 1983, the federally designated poverty level was $9,900 of income per year for a family of four. (See *Federal Register*, **48**:7010, 1983.)

cy live in counties that have at least 10,000 low-income women at risk; in each of these 175 counties, all of them metropolitan, an average of almost 30,000 low-income women are at risk. Counties with less than 2,000 low-income women at risk account for 73 percent of all U.S. counties but only 18 percent of all low-income women at risk. Most, but not all, of these counties are nonmetropolitan.

The 1983 study identified 2,371 counties (76 percent of all counties in the United States) as having organized clinics that offered family planning services. 764 counties had no family planning clinics. Almost all (93 percent) of the counties without clinic services were nonmetropolitan counties, and 97 percent of the unserved counties had fewer than 2,000 low-income women at risk of unintended pregnancy living in them. In addition to the 24 percent of counties without family planning clinics, another 49 percent had only one clinic per county, 19 percent had two or three clinics per county, and eight percent had four or more.

Not surprisingly, counties with the largest number of low-income women at risk of pregnancy also count the largest average number of family planning clinics. Virtually all counties with 20,000 or more low-income women at risk had four or more family planning sites. Conversely, 50 percent of counties with fewer than 1,000 women at risk had only one clinic, and 41 percent had none at all.

A larger proportion of metropolitan than of nonmetropolitan counties have two or more family planning clinics (52 percent compared with 20 percent). Conversely, nonmetropolitan are far more likely than metropolitan counties to be without a clinic—29 percent and eight percent, respectively.

Service Providers

In 1983, 5,106 clinics offered family planning services. (This analysis excludes a few clinics that had been included in totals published earlier but for which no patient data were reported in 1983.) Health departments sponsored 56 percent of all clinics, Planned Parenthood operated 13 percent, and hospitals, seven percent, other agencies accounted for 23 percent of clinics. Health department clinics tended to be located in nonmetropolitan counties (58 percent), and in counties having fewer than 2,000 low-income women at risk of pregnancy (48 percent). In contrast, the majority (55–83 percent) of hospital facilities, Planned Parenthood sites and other clinics were located in metropolitan counties, and hospital facilities in particular tended to be located in counties with 10,000 or more low-income women at risk (72 percent).

Table 2 shows that the larger the county, the smaller the proportion of all clinics that

Table 1. Number of low-income women at risk of unintended pregnancy (in 000s); and number of counties, by family planning clinics per county, according to number of low-income women at risk per county and location, 1983

No. of women at risk per county and metropolitan status of county	No. of women at risk	Clinics per county					
		Total	None	One	Two	Three	≥Four
Total	**9,492**	**3,135**	**764**	**1,524**	**440**	**164**	**243**
<1,000	781	1,646	678	818	110	29	11
1,000–1,999	911	655	63	407	137	35	13
2,000–4,999	1,473	478	19	241	127	46	45
5,000–9,999	1,257	181	3	52	47	38	41
10,000–19,999	1,424	98	1	5	18	15	59
≥20,000	3,645	77	0	1	1	1	74
Metropolitan	**7,044**	**725**	**57**	**291**	**129**	**67**	**181**
<1,000	54	85	23	58	3	1	0
1,000–1,999	161	113	18	74	13	5	3
2,000–4,999	658	197	12	108	49	15	13
5,000–9,999	1,101	155	3	45	45	30	32
10,000–19,999	1,424	98	1	5	18	15	59
≥20,000	3,645	77	0	1	1	1	74
Nonmetropolitan	**2,448**	**2,410**	**707**	**1,233**	**311**	**97**	**62**
<1,000	727	1,561	655	760	107	28	11
1,000–1,999	750	542	45	333	124	30	10
2,000–4,999	816	281	7	133	78	31	32
5,000–9,999	156	26	0	7	2	8	9
10,000–19,999	0	0	0	0	0	0	0
≥20,000	0	0	0	0	0	0	0

Note: In this and subsequent tables, numbers and percentages may not add to totals because of rounding.

Table 2. Number and percentage distribution of organized family planning clinics and patients, by location and number of low-income women at risk of unintended pregnancy per county, according to type of provider

Location and number of women at risk per county	No.	Type of provider				
		Health department	Planned Parenthood	Hospital	Other	Total
Clinics	**5,106**	**56**	**13**	**7**	**23**	**100**
Location						
Metro	2,648	46	18	12	24	100
Nonmetro	2,458	68	8	3	21	100
Women at risk						
<1,000	1,183	71	6	2	21	100
1,000–1,999	842	67	11	3	20	100
2,000–4,999	847	66	12	3	19	100
5,000–9,999	481	49	24	6	22	100
10,000–19,999	533	46	25	8	21	100
≥20,000	1,220	37	14	19	30	100
Patients*	**4,965**	**40**	**28**	**11**	**21**	**100**
Location						
Metro	3,700	33	33	14	21	100
Nonmetro	1,265	60	15	4	21	100
Women at risk						
<1,000	368	63	13	4	20	100
1,000–1,999	480	62	15	3	20	100
2,000–4,999	755	54	21	5	20	100
5,000–9,999	642	39	36	6	19	100
10,000–19,999	715	36	40	8	15	100
≥20,000	2,004	26	29	20	25	100

*Number of patients given in 000s.

Table 3. Average annual number of family planning patients per clinic, by number of women at risk of unintended pregnancy per county, according to type of provider

Women at risk	All providers	Health department	Planned Parenthood	Hospital	Other
Total	**972**	**684**	**2,018**	**1,471**	**908**
<2,000	419	379	745	507	414
2,000–4,999	892	730	1,552	1,433	951
5,000–9,999	1,335	1,080	2,029	1,273	1,168
10,000–19,999	1,341	1,056	2,166	1,321	990
≥20,000	1,643	1,164	3,361	1,744	1,348

are run by health departments. However, health departments operate more clinics than any other category of service provider, and they had twice as many clinics in metropolitan counties as did the next largest category of provider. Health departments are also the largest category of provider in counties with 5,000 or more women at risk. The next largest clinic operators in counties of this size are Planned Parenthood and the other organizations. Hospitals consistently account for the smallest percentage of total providers, except in counties with the largest numbers of low-income women at risk of pregnancy.

The average annual number of patients served per clinic site varies by the type of provider and the number of women at risk in the county, as the data in Table 3 indicate. Among all providers, the average annual number of family planning patients served per clinic is lowest in the counties with the fewest number of women at risk, and highest in the counties with the largest numbers. The overall average caseload ranges from about 419 to 1,643 patients per site. The average annual caseload at health department clinics is consistently smaller than that of any other type of provider (except in counties with 10,000–19,999 low-income women at risk, where clinics of the other agencies have smaller average caseloads); the caseload at Planned Parenthood clinics is invariably larger than that at any other type of provider. This is not an unexpected finding, since Planned Parenthood specializes in contraceptive services while health departments and many other clinics offer a wider range of services. An average of 684 family planning patients were seen at each health department site in 1983, compared with an average of 2,018 at each Planned Parenthood clinic.

Differences in the proportion of patients served by each type of provider reflect differences in the number of clinics each operates and in the average size of the caseloads. Health department clinics, which operated 56 percent of all clinics, accounted for 40 percent of all patients served in 1983, ranging from 33 percent of patients in metropolitan areas to 60 percent in nonmetropolitan areas (see Table 2). Planned Parenthood, which operated 13 percent of all sites, served 28 percent of all patients. In metropolitan counties, Planned Parenthood served as many patients as did health departments (33 percent), but in nonmetropolitan counties, the organization served only 15 percent of all patients. Hospitals served 11 percent of patients nationally, even though they operated only seven percent of all sites. With their concentration of clinics in metropolitan areas, hospitals served 14 percent of clinic patients in metropolitan counties but only four percent of those in nonmetropolitan counties. The data on other types of providers show little variation. Other providers operated 23 percent of clinics and served 21 percent of all patients in both metropolitan and nonmetropolitan areas.

Proportions Served

To analyze the extent to which low-income women at risk of unintended pregnancy are served by organized family planning clinics, data on the number of patients served are compared with the number of low-income women who are at risk of unintended pregnancy. Although the vast majority of clinic patients have family incomes that place them at or below 150 percent of poverty (83 percent nationally in 1983), there are no available data on the proportion of low-income patients at the county level. Therefore, the calculations at the county level in this article assume that all patients served are low-income, which is an overestimate. (If the assumption that all clinic patients are low-income is projected nationally, then the proportion of low-income women at risk of pregnancy who are served by organized family planning clinics would be 52 percent. National data, however, show the proportion to be 44 percent.[7]) Thus, the estimates of the numbers of low-income women who are *not* served by organized family planning clinics are conservative. Of course, some low-income women receive family planning services from private physicians or use methods available from pharmacies, but there are no data at the county level on these women either.

The percentage of women at risk of pregnancy who are served has been estimated at the county level assuming that most clinic patients receive services in their own county. (Previous surveys of adolescent patients, for example, have found that 90 percent received services within their own county.[8]) Obviously, there are some areas in which a significant proportion of the clinic patients have crossed county lines to receive services, but it is impossible from the data available to determine how many patients have done so. The data do indicate where movement across county boundaries may be extensive. The majority of states have at least one county in which the number of patients served exceeds the number of low-income women at risk of pregnancy in the county. In some instances, as in the case of providers whose objective is to serve residents of two or more counties at one site, data for a wider geographic area than the county may be better suited for program planning and evaluation. In evaluating a progam's effectiveness in serving low-income women, however, providers should consider whether the travel costs to and from another county may deter women from obtaining the services that they need.

The total number of patients served by organized family planning clinics in 1983—4,965,000—represents 52 percent of the 9,492,000 low-income women at risk of unin-

Table 4. Number of counties and unserved women (in 000s), by location and number of low-income women at risk of unintended pregnancy per county, according to proportion of women served

Location and number of women at risk per county	Total	None	<50 percent	≥50 percent
Counties	**3,135**	**767**	**1,082**	**1,286**
Location				
Metro	725	60	357	308
Nonmetro	2,410	707	725	978
Women at risk				
<1,000	1,646	679	389	578
1,000–1,999	655	63	260	332
2,000–4,999	478	20	256	202
5,000–9,999	181	4	93	84
10,000–19,999	98	1	53	44
≥20,000	77	0	31	46
Unserved women	**4,526**	**430**	**3,042**	**1,055**
Location				
Metro	3,344	127	2,384	832
Nonmetro	1,183	303	658	223
Women at risk				
<1,000	414	242	156	17
1,000–1,999	429	82	241	106
2,000–4,999	717	58	525	135
5,000–9,999	615	29	418	168
10,000–19,999	710	20	493	197
≥20,000	1,641	0	1,209	432

tended pregnancy. Given this service statistic, it becomes clear that more than 4.5 million low-income women at risk of unintended pregnancy were not receiving services from organized family planning clinics in 1983—3.3 million in metropolitan counties and almost 1.2 million in nonmetropolitan counties. (There is essentially no difference in the proportion of women at risk served in metropolitan and nonmetropolitan counties.) The proportion served by family planning clinics is lowest in counties with fewer than 1,000 women at risk (47 percent) and greatest in counties with more than 20,000 (55 percent).

The proportion served in counties with the fewest number of women at risk is low, in part because many of those counties have no clinic services available. 31 percent of women at risk live in countries without clinics. In counties with fewer than 1,000 low-income women at risk and where there are clinics, 68 percent of the women were served. Likewise, in counties that have 1,000–1,999 women at risk, nine percent of women living in counties with no clinics, compared with 58 percent of women living in counties that do have clinics, were served.

The proportion served ranged from zero in 767 counties (including three counties in which fewer than 0.5 percent of low-income women were served) to 75 percent or greater in 593 counties. From 1–49 percent of the low-income women at risk were provided with organized clinic services in 49 percent of all metropolitan and 30 percent of all nonmetropolitan counties (see Table 4), while 42 percent of metropolitan counties and 41 percent of nonmetropolitan counties served 50 percent or more of low-income women at risk of pregnancy.

Included in those serving at least 50 percent of women at risk are approximately 250 counties (in 44 states) in which the estimated number of clinic patients in 1983 was greater than the number of low-income women at risk of unintended pregnancy in the county. The vast majority of these counties are nonmetropolitan counties with fewer than 2,000 low-income women at risk of pregnancy. Counties serving more than 100 percent of those in need ranged from one percent of counties in Mississippi to 50 percent of counties in Connecticut. Although such counties may reflect incorrect estimates of the number of women at risk or of the number of patients living in sparsely populated areas, it is more likely that the estimates indicate extensive use of local services by residents from neighboring counties, where family planning services are less available. Such numbers might also represent a greater use of clinics by higher income women.

As the numbers in Table 4 indicate, only

Table 5. Number of counties and number of low-income women at risk who are not served by organized family planning clinics, by state, according to clinic availability

States	Counties			Unserved women (in 000s)		
	Total	No clinics	Clinics serve <50%*	Total	No clinics	Clinics serve <50%*
Total	**3,135**	**767**	**1,082**	**4,527**	**430**	**3,042**
Alabama	67	0	48	120	0	95
Alaska	23	13	2	2	5	1
Arizona	14	0	5	46	0	41
Arkansas	75	0	60	74	0	68
California	58	5	26	497	5	393
Colorado	63	23	16	51	5	31
Connecticut	8	1	1	10	3	2
Delaware	3	0	1	13	0	9
D.C.	1	0	0	16	0	0
Florida	67	0	24	194	0	153
Georgia	159	0	69	127	0	93
Hawaii	4	0	4	29	0	29
Idaho	44	16	20	28	9	15
Illinois	102	51	29	251	34	207
Indiana	92	37	26	94	31	40
Iowa	99	73	6	53	41	12
Kansas	105	44	40	49	9	34
Kentucky	120	0	32	79	0	32
Louisiana	64	3	32	117	3	80
Maine	16	0	8	18	0	12
Maryland	24	0	3	28	0	14
Massachusetts	14	0	9	98	0	84
Michigan	83	6	48	212	4	190
Minnesota	87	73	3	79	64	3
Mississippi	82	1	37	83	†	57
Missouri	115	38	52	79	24	48
Montana	56	39	5	13	9	3
Nebraska	93	62	13	34	17	5
Nevada	17	3	1	4	†	†
New Hampshire	10	1	1	9	2	1
New Jersey	21	1	11	137	7	90
New Mexico	32	3	10	31	1	27
New York	62	3	30	412	5	326
North Carolina	100	0	49	157	0	97
North Dakota	53	38	4	14	8	3
Ohio	88	11	40	201	15	161
Oklahoma	77	8	14	43	2	23
Oregon	36	5	26	69	1	56
Pennsylvania	67	4	24	187	5	103
Rhode Island	5	1	3	17	1	8
South Carolina	46	0	14	81	0	39
South Dakota	66	55	3	22	19	4
Tennessee	95	0	16	70	0	23
Texas	254	76	80	213	34	97
Utah	29	16	10	60	24	37
Vermont	14	2	4	2	1	4
Virginia	136	14	51	115	18	75
Washington	39	9	12	59	4	39
W. Virginia	55	1	26	35	†	24
Wisconsin	72	20	33	93	16	53
Wyoming	23	11	1	4	3	†

*Excluding counties with no clinic. †Fewer than 500 women at risk.

Table 6. Counties with 20,000 or more low-income women at risk of unintended pregnancy in which fewer than half were served, by the percentage and number of unserved women in each county (in 000s), by state

State and county	Percent	Number
Alabama		
Mobile	63	13
Arizona		
Maricopa	51	34
California		
Fresno	51	15
Los Angeles	53	198
Orange	51	33
Sacramento	59	23
San Diego	58	53
Florida		
Dade	76	55
Hillsborough	68	20
Orange	60	13
Pinellas	60	12
Hawaii		
Honolulu	66	24
Illinois		
Cook	61	133
Massachusetts		
Middlesex	62	24
Worcester	51	11
Michigan		
Oakland	83	19
Wayne	77	79
Missouri		
St. Louis	51	12
New Jersey		
Hudson	58	17
New Mexico		
Bernalillo	61	15
New York		
Bronx	74	66
Erie	71	27
Kings	77	118
Queens	73	54
Ohio		
Cuyahoga	55	31
Franklin	60	25
Montgomery	67	15
Oklahoma		
Oklahoma	54	11
Pennsylvania		
Allegheny	52	24
Utah		
Salt Lake	75	20
Washington		
Pierce	67	15

about 10 percent of low-income women at risk of pregnancy who did not receive clinic services in 1983 lived in counties that had no family planning programs. Most counties without any clinics have small populations; each has an average of 561 unserved low-income women at risk.

Two-thirds of unserved women live in counties where existing clinics reach fewer than half of those at risk. The majority of such counties are metropolitan and have 10,000 or more low-income women at risk of unintended pregnancy. About one-quarter of unserved women live in counties where clinics are reaching at least 50 percent of women at risk, and again, the majority live in the two largest categories of metropolitan counties.

Table 5 (see page 57) indicates that almost 70 percent of the counties without organized family planning programs, and approximately 80 percent of the women living in such counties, can be found in 12 states*—nine in the Midwest, two in the South and one in the Northwest. Minnesota has the largest number of low-income women at risk living in counties with no family planning clinics (64,000 women in 73 counties).

If low-income women living in counties with clinic programs serving less than 50 percent of those at risk are examined, California has the largest number of unserved women—393,000 living in 26 of its 58 counties. Approximately 80 percent of the unserved women in the state were living in those counties serving less than 50 percent of those at risk; the same proportion was true for five other states having the next largest numbers of unserved women: Florida, Illinois, Michigan, New York and Ohio. The women from these five states and California who live in counties where fewer than one-half of low-income women at risk are served by existing clinics represent approximately one-third of all unserved women in the country.

Evidence of movement across county lines from areas with limited services to areas with more extensive services appears most clearly in the data on Alaska, South Dakota, Utah and Vermont, where the unmet need in counties with no clinic services or with fewer than 50 percent of low-income women served exceeded the total unmet need in all counties in the state. In Alaska, for example, the number of patients served by organized programs in two counties was 3–4 times the number of low-income women at risk residing in the county, while the majority of other counties had no clinic programs.

Discussion

Family planning providers have established an extensive network of clinics around the country that offer services to low-income women. However, after rapid growth in the early 1970s, the system appears to have reached a plateau; in fact, the proportion of countries that have family planning clinics decreased slightly between 1975 and 1983.

Other studies have attributed the lack of continued growth in clinic services to cutbacks in public (primarily federal) funding for family planning services.[9] New federal and state budgets do not contain additional funds for service expansion, even though low-income women in the United States who are at risk of unintended pregnancy are still less likely than higher income women to be using a contraceptive method. Since clinics are a major source of services for low-income women at risk, each state and area should carefully examine its existing services and its potential for new sites to identify the most feasible way to increase the proportions of those who receive family planning services.

The data in Table 6 provide evidence that 27 percent of all unserved low-income women at risk in the United States live in just 31 large counties. Each of these counties has at least one provider, but fewer than 50 percent of women at risk are being served. An average of 39,000 low-income women at risk of pregnancy are unserved in each county, with the numbers ranging from 11,000 to 198,000. While more sites may be needed, coverage could also be increased if services at existing clinics were made more accessible and if more outreach to women at risk was attempted. While services should be accessible to low-income women living in all U.S. counties, decreasing the number of unserved women in those few large counties, and in all counties that already have family planning providers, would be a major step in reducing the total number of unserved women.

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*Illinois, Indiana, Iowa, Minnesota, Missouri, Nebraska, Ohio, South Dakota, Texas, Utah, Virginia and Wisconsin.

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The Abortion Issue in the 1984 Elections

By Donald Granberg

Summary

In the 1984 election, Ronald Reagan, the Republican presidential incumbent and an opponent of legal abortion, defeated Walter Mondale, a prochoice Democrat, by a wide margin. Despite Reagan's sweep of 49 states, however, conservatives lost a little ground in the Senate, where four of the seven new senators elected take a prochoice position on abortion. On the other hand, antiabortion forces registered some gains in the House of Representatives.

The voting groups were more divided over the abortion issue in 1984 than they had been in 1980: In 1980, Reagan voters and Carter voters did not differ significantly in their attitudes toward abortion, but in 1984, Reagan voters were significantly more likely to be opposed to abortion than were Mondale voters. Nevertheless, only a small minority of voters considered abortion to be a major national issue, and the two voter groups were far more divided on several other issues than they were on abortion.

There was no antiabortion consensus among the electorate as a whole, or among Reagan voters in particular. The level of approval for legalized abortion has, in fact, remained quite stable since 1973, and a popular base in favor of banning abortion seems to be lacking.

> **". . . The abortion issue played at most a minor role in the 1984 presidential and congressional elections: Abortion considerations appear to have influenced a minority of voters, but were not decisive in determining the outcome. . . ."**

Introduction

In this article, we investigate the role played by the abortion issue in determining the outcome of the 1984 national elections. That year, Ronald Reagan, the Republican presidential incumbent, was endorsed for the second time by the National Right to Life Committee (NRLC), the largest of the organized groups seeking to overturn the 1973 Supreme Court decision legalizing abortion. Reagan's Democratic opponent, Walter Mondale, who was supported by the National Abortion Rights Action League (NARAL), was in favor of federal funding of abortions for indigent women, and had selected Geraldine Ferraro, a prochoice congresswoman, as his running mate. According to the final vote count, the Reagan-Bush ticket won 59 percent of the popular vote, and the Mondale-Ferraro ticket, 41 percent.

The composition of both houses of Congress changed only slightly as a result of the 1984 elections. The Republicans kept their majority in the Senate, but the prochoice Democrats made a net gain of one seat. The Democrats held their majority in the House of Representatives, but antiabortion forces registered a net gain of about 12 seats.

An examination of both parties' 1984 platforms reveals wide differences in their positions on abortion. The Republican party favored a constitutional amendment outlawing abortion, opposed federal funding of abortion and reaffirmed its support for the appointment of judges "who respect the traditional family values and the sanctity of human life."[1] The Democratic party, in contrast, opposed any constitutional amendment reversing the Supreme Court's 1973 *Roe v. Wade* decision, favored federal funding of abortion, deplored violent acts directed at abortion clinics, and supported "continuing federal interest in developing strong family planning and family life education programs, and medical research aimed at reducing the need for abortion."[2]

It is clear that in 1984, the two major political parties and their respective nominees differed widely over abortion and over the government's role in the provision and funding of abortions. It is equally evident that the presidential candidate committed to an antiabortion position won the election by a landslide. What must be determined is whether Reagan won because of his position on abortion, despite his position on abortion or without regard to his position on abortion.

As had been the case in the 1978 and 1980 elections, the issue of abortion was highly visible throughout the 1984 presidential and congressional campaigns. However, earlier analyses found that the abortion issue had not been particularly important in deciding the outcome of the 1978 and 1980 elections.[3] Furthermore, these studies have shown, the gains of the antiabortion forces in 1978 and 1980 were incidental consequences of the shift toward conservatism at that time.

The present analysis of the 1984 elections examines data from two sources: an exit poll of 9,174 voters conducted on Election Day by the Columbia Broadcasting System in conjunction with the *New York Times* (CBS/*NYT*); and the 1984 national election study carried out by the Center for Political Studies (CPS) of the University of Michigan, in which a representative sample of 2,257 U.S. adults 18 or older were interviewed before and after the November election.

The Presidential Election

Given the clear-cut differences between the two presidential candidates on the issue of abortion, to what extent did Mondale voters and Reagan voters differ in their attitudes toward abortion? Before the election, the CPS asked respondents how they planned to

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Table 1. Percentage distribution of CPS respondents, by abortion position respondent agreed with, according to presidential preference, 1984, prior to election

Abortion position	Total	Mondale	Reagan
A By law, a woman should always be able to obtain an abortion as a matter of personal choice	**37**	42	33
B The law should permit abortions for reasons other than rape, incest or danger to a woman's life, but only after the need for abortion has been clearly established	**20**	19	21
C The law should permit abortion only in case of rape, incest or when the woman's life is in danger	**30**	28	32
D By law, abortion should never be permitted	**13**	11	14
Total	**100**	100	100

vote and how they defined their position on abortion. These findings are summarized in Table 1, which contains the exact wording attached to four possible positions on abortion. The results show that Reagan backers were somewhat more likely to take a conservative position on abortion (C or D) than were Mondale backers, and the differences are significant ($p<0.01$). Despite these differences, however, the table also shows that the majority of voters in 1984 (57 percent) took one of the two prochoice positions on abortion (A or B). Overall, there was no change in the public's attitude toward abortion between 1980, when 56 percent of CPS respondents had chosen one of the two prochoice positions, and 1984.

The CBS/*NYT* exit poll found that overall, 44 percent of respondents believed the abortion law should remain unchanged; 29 percent believed abortion should be legal "only in extreme circumstances"; and 27 percent believed that abortion should be illegal.* The breakdown in the vote according to presidential support was as follows: Fifty-four percent of Mondale voters, compared with 36 percent of Reagan voters, said abortion should remain legal; 26 percent of Mondale voters, compared with 33 percent of Reagan voters, believed abortion should be legal only in extreme circumstances; and only 20 percent of Mondale voters, compared with 31 percent of Reagan voters, said that abortion should be illegal.

In the CPS survey, respondents were presented with a list of 19 population groups and asked which they felt "particularly close to"—which groups were most like themselves "in their ideas and interests and feelings about things." A majority of the people identifying most closely with several categories voted for Mondale. These groups included blacks, feminists, liberals, labor union members, poor people, Hispanics, environmentalists, women and the elderly. On the other hand, those who identified closely with born-again Christians, conservatives, Southerners, men, businessmen and businesswomen, whites, farmers and young people were more inclined to vote for Reagan. Moreover, the two largest categories—the middle class and working men and women—supported Reagan by a substantial majority (66 percent and 60 percent, respectively).

The vote of white born-again Christians in the presidential election is particularly noteworthy. Whereas 61 percent of this group had voted for Reagan in 1980, 80 percent did so in 1984. This trend could portend a future in which white born-again Christians comprise a solid core of support for conservative Republican candidates. On the other hand, it is unclear whether any candidate other than Reagan could garner the support of fundamentalists without alienating moderate white middle class voters. Moreover, as of this writing, fundamentalists are embroiled in internal disputes and appear to be in disarray.

The Salience of Abortion

How did the effect of the abortion issue compare with the influence of other issues in the presidential election? One way to examine this question is to assume a purely retrospective model of voting, which holds that the voters' evaluation of an incumbent will focus on his past performance.[1] The influences of the opponent, the political parties and ideology are not considered. In the CPS preelection survey, respondents were asked to give their general assessment of Reagan's performance during his first term. They were then asked to evaluate his performance with regard to how well he handled the economy, the budget deficit and foreign affairs. We examined the relative strength of these independent variables as predictors of how people would vote in the 1984 elections, using multiple regression analysis. The dependent variables in the analyses were voters' general assessment of Reagan's past performance and how they voted. The results provide strong evidence that the 1984 presidential election centered on a positive evaluation of Reagan's earlier record, and that his handling of the economy was the dominant factor in that assessment. When abortion was added as an independent variable, it did not achieve statistical significance. Thus, these results indicate, the voters' evaluations of Reagan's first-term performance and how they voted were not affected by their attitudes toward abortion. Further, these findings suggest that the abortion issue may not have been as influential in the election as some commentators have claimed. However, because the retrospective model focuses only on attitude toward the incumbent candidate's past record, such evidence is inferential rather than direct.

Other findings from the CPS survey provide more direct evidence of the salience of abortion in the presidential election. When respondents were asked to spontaneously name up to three of the most important problems facing the country, only one percent mentioned abortion; when asked to name *the* most important issue, only 0.4 percent mentioned abortion. All seven respondents who considered abortion the single most important problem voted for Reagan. The issues most frequently cited by respondents were government spending and the federal deficit, nuclear war, unemployment, poverty, inflation, Latin America and programs for the elderly.

In another section of the CPS preelection survey, respondents were asked to name the reasons they might want to vote for or against Reagan or Mondale. Slightly over three percent named the abortion issue as a reason for voting for Reagan, and 2.5 percent gave abortion as a reason for voting against him. 1.4 percent said they might vote for Mondale because of his position on abortion, and 2.9 percent gave abortion as a reason for voting against him. These data appear to indicate that despite the distinctness of the candidates' positions on abortion, few people regarded abortion as a reason for voting for or against either Reagan or Mondale. Nevertheless, the evidence suggests, the abortion issue may have been a slight asset for Reagan among the minority of respondents who did spontaneously mention a candidate's position on abortion as a reason for their vote.

Voters participating in the CBS/*NYT* poll were presented with a list of seven issues and asked to check the one or two they deemed most influential in their decision to vote for one or the other candidate. The results, shown in Table 2, indicate that about seven percent checked abortion as a reason for voting as they did. However, among those who did so, a sizable majority (73 percent) reported having voted for Reagan. At each level of

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*The exact wording of the question was, "Should abortion be legal?" The three provided alternatives were, "Yes, as it is now", "Legal only in extreme circumstances", and "No."

Table 2. Percentage of CBS/*NYT* exit poll respondents who checked each of seven issues as important in the 1984 presidential election; and percentage distribution of respondents, by presidential preference, according to whether they checked each reason as important

Issue	% of respondents*	% voting for candidate			Eta
		Mondale	Reagan	Total	
The economy					
Checked	40	25	75	100	0.27
Did not check	60	53	47	100	
Arms control/threat of war					
Checked	29	65	35	100	0.29
Did not check	71	33	67	100	
Strong U.S. defense					
Checked	25	8	92	100	0.40
Did not check	75	53	47	100	
Reducing the federal deficit					
Checked	23	47	53	100	0.06
Did not check	77	40	60	100	
Fairness toward the poor					
Checked	21	82	18	100	0.41
Did not check	79	31	69	100	
Abortion					
Checked	7	27	73	100	0.08
Did not check	93	43	57	100	
Policy toward Central America					
Checked	4	61	39	100	0.08
Did not check	96	41	59	100	

*Respondents were asked to check up to two issues.

education. Reagan voters were about twice as likely as Mondale voters to check abortion as a reason for their vote (not shown). Nevertheless, the association between abortion attitude and choice of candidate was very weak (eta = 0.08).[*] Whereas the results of the CPS survey indicate that voters considered the economy and arms control the two most important issues in the election, the two issues that most clearly differentiated Mondale and Reagan voters appear to have been their attitudes toward the need for a strong defense policy and fairness toward the poor: Ninety-two percent of respondents who checked a strong U.S. military as a reason for their selection of a candidate voted for Reagan (eta = 0.40), whereas 82 percent of those who checked fairness to the poor voted for Mondale (eta = 0.41).

The CBS/*NYT* poll also indicates that voters were more divided over other issues than they were over abortion. Opinions about the condition of the U.S. economy divided the voting groups most sharply: Ninety-one percent of those who believed the economy was in worse shape in 1984 than it had been in 1980 voted for Mondale, whereas 86 percent of those who believed the economy had improved during Reagan's first administration voted for Reagan (eta = 0.68). The second most divisive issue appears to have been whether the United States should negotiate a nuclear freeze with the Soviet Union or engage in a further military buildup before negotiations: Sixty-three percent of those in favor of negotiating a nuclear freeze voted for Mondale, whereas 80 percent of those who believed the United States should strengthen its defenses before negotiating voted for Reagan (eta = 0.42). In contrast, voters were less divided over abortion: Fifty-two percent of those who believed abortion should remain legal voted for Mondale, and 68 percent of those who thought it should not be legal voted for Reagan (eta = 0.18).

Regression analyses of both the CBS/*NYT* and the CPS data confirm that Reagan voters were significantly less liberal in their attitudes toward abortion than were Mondale voters, but that the two groups differed more widely on every other attitude examined than they did on abortion. An analysis of CPS data, which measured the relative strength of association between how people voted and their positions on eight items, found correlation coefficients of 0.39 for government social services; 0.38 for government guarantees for jobs; 0.37 for military spending; 0.32 for relations with the Soviet Union and for aid to minority groups; 0.31 for aid to women; 0.30 for policy toward Central America; and 0.11 for abortion.

The Congressional Races

Incumbents in the 1984 Senate elections won 26 of 33 races. Of the seven new senators elected, four had taken a prochoice position on abortion. In nine of the Senate races, voters had a clear-cut choice between a prochoice Democrat, supported by the NARAL, and an antiabortion Republican, supported by the NRLC's Political Action Committee (NRLCPAC).[†] The political action committees on both sides of the issue spent large amounts of money in these highly contested races. However, none of the candidates who received heavy financial support from either the NARAL or the NRLCPAC claimed victory.

Overall, the Republican candidates won a majority of the votes in these contests (by 52.5 percent to 47.5 percent), but the Democrats were victorious in five of the nine races. It cannot, however, be assumed that the candidates' positions on the abortion issue were decisive factors in the outcomes of these elections. It must also be shown that voters' attitudes toward abortion influenced their choice of candidate. Pertinent evidence from the CBS/*NYT* exit poll indicates a mild but significant relationship between voters' attitudes toward abortion and their vote for senator. Of the voters who took the most liberal position on abortion, about 60 percent voted for the prochoice, Democratic candidate, and 40 percent voted for the antiabortion, Republican candidate. However, correlation analysis indicates that the strength of the relationship between attitude toward abortion and voting choice varied considerably between states. The correlation was strongest (r = 0.49) in the North Carolina race, where 77 percent of those who voted for prochoice Democrat James B. Hunt, Jr., took a prochoice position on abortion, compared with only 27 percent of those who voted for Jesse Helms, the antiabortion, Republican candidate (Helms won). The relationship between vote and attitude toward abortion was weakest in Texas (r = 0.06), where there does not appear to have been any clear consensus on the abortion issue. Correlation coefficients in the other seven contests ranged from 0.12 in the Massachusetts race, which pitted prochoice Democrat John Kerry against antiabortion Republican Raymond Shamie (Kerry won), to 0.25 in the Iowa race between Democrat Tom Harkin

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[*] Eta, which ranges from 0.00 to 1.00, is a measure of the degree of association between two variables. It is similar to the standard Pearson correlation coefficient, but whereas the latter is sensitive only to linear effects, eta can detect any systematic relationship between two variables.

[†] Colorado, Iowa, Massachusetts, Michigan, Minnesota, Montana, North Carolina, Texas and West Virginia.

Table 3. Relationship between the Senate vote in nine states and 10 independent variables

Variable	Correlation coefficient
Party identification	0.56
Ideology	0.36
Income	0.11
Attitude toward:	
The economy	0.52
Taxation	0.39
The military	0.39
Poverty program	0.32
Central America	0.28
Abortion	0.17

and Republican Roger W. Jepsen (Harkin won).

It is also important to consider the extent to which the voter groups were divided over abortion in comparison with their polarization over other political issues. Does knowledge of a voter's attitude toward abortion enable pollsters to predict how that individual will vote? To examine this possibility, we carried out an analysis to determine the correlation between the individual's voting choice and his or her attitude toward abortion and five other issues. The results are shown in Table 3. It is evident from the table that the groups voting in the Senate races were divided to a slight but significant degree over the abortion issue. However, the table also shows that the voter groups were more polarized over the economy, taxation, the military, poverty programs and Central America than they were over abortion. These results seem to indicate that factors other than abortion were more powerful predictors of how an individual would vote.

In 36 races for the House of Representatives, a candidate supported by the NARAL faced a candidate supported by the NRLCPAC. In 35 of these contests, the prochoice candidate was a Democrat and the antiabortion candidate, a Republican. (The exception was the Ninth Congressional District in Missouri, in which the prochoice, Republican challenger was defeated by the antiabortion, Democratic incumbent by a margin of 53 percent to 47 percent.) In 31 of these 36 races, the incumbent was reelected. Only two incumbents (both prochoice) were defeated. In each of the three races in which there was no incumbent, the antiabortion candidate won. Overall, the antiabortion candidates received 53 percent of the vote and won 20 of the 36 contests. The antiabortion forces in the House appear to have gained some ground as a result of the elections, but the dominance of prochoice Democrats in that chamber does not seem to have been jeopardized as a consequence.

Conclusions

Overall, the results of this study suggest that the abortion issue played at most a minor role in the 1984 presidential and congressional elections. Abortion considerations appear to have influenced a minority of voters, but were not decisive in determining the general outcome of the election. Although abortion remains a partisan issue, with conservative Republicans more likely to oppose it and liberal Democrats more likely to take a prochoice position, it is clear that there is no antiabortion consensus among the U.S. electorate, even among those who voted for Reagan.

Moreover, despite strenuous efforts to make abortion a major issue, attitudes toward abortion have remained remarkably stable since the procedure was legalized in 1973.[5] According to the most reliable trend data on abortion attitudes, those gathered by the National Opinion Research Center of the University of Chicago, there was a very substantial increase in approval for legalized abortion between 1965 and 1973. However, a comparison of data from 1973–1975 with data from 1983–1985 reveals that in the past decade, there has been a very slight decrease in the proportion of Americans who approve of abortion in cases of rape, incest or endangerment to the woman's life (from 87 percent to 85 percent). There has been a slightly larger decline (from 50 percent to 45 percent) in approval for legal abortion in cases where the couple cannot afford to raise more children and in instances where the woman does not want to marry the man responsible for her pregnancy or does not want any more children. Similarly, Gallup polls conducted in 1975, 1977, 1983 and 1985[6] also show that public opinion on abortion has changed little over the past decade. About 23 percent of respondents in these polls said that abortion should be legal under all circumstances. The proportion believing that abortion should be illegal under all circumstances appears to have decreased slightly—from about 22 percent of those polled in the 1970s to 19 percent in the 1980s. The majority of participants in all four polls believed that abortion should be legal only under certain circumstances.

Nonetheless, opponents of abortion who would like to see the procedure banned for all but the most extreme reasons (including the NRLC and President Reagan) could try to change the legal status of abortion in several ways. One option would be to press for a constitutional amendment outlawing the procedure. However, given the stability of public opinion on the abortion issue, it is unlikely that antiabortion proponents could garner the necessary votes in Congress to pass such an amendment in the foreseeable future. It is equally unlikely that the President would seriously consider issuing an executive order banning abortion. The route that antiabortion proponents are most likely to take is to petition the Supreme Court to reconsider the *Roe v. Wade* decision. We can only speculate as to how the current justices, two of whom were appointed by President Reagan, would vote should the abortion issue be raised in this way. It is possible that before his term expires, the President may have the opportunity to appoint new justices to the Supreme Court. It is in this respect that the future of abortion policy in the United States is most likely to be fundamentally affected by the outcome of the 1984 election.

Postscript—The 1986 Election

A preliminary analysis of the 1986 congressional elections shows that the Democrats regained control of the Senate; they now hold 55 of the 100 seats in that chamber. Prochoice candidates registered a net gain of three Senate seats. The Democrats, who maintained control of the House of Representatives, now hold 258 seats in that chamber, while the Republicans hold 177. In all, the Democrats registered a net gain of five seats in the House of Representatives in 1986.

The election results confirm the reversal of the conservative trend in the Senate and reflect a shift toward more moderate, pragmatic leadership. The fact that Democrats now chair key Senate committees will make it more difficult for antiabortion forces to pass antiabortion legislation. Moreover, as the 1988 election approaches, the likelihood that Congress would confirm the appointment of controversial nominees to the courts diminishes.

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Abortion Services in the United States, 1984 and 1985

By Stanley K. Henshaw, Jacqueline Darroch Forrest and Jennifer Van Vort

Summary

In 1984 and 1985, the number of abortions, the abortion rate and the abortion ratio stayed at approximately the same levels as in the previous three years. Just under 1.6 million abortions were performed, about three percent of women of reproductive age obtained an abortion, and about 30 percent of pregnancies (excluding those ending in stillbirths and miscarriages) were terminated by abortion.

However, the number of abortion providers declined by five percent between 1982 and 1985, and the geographic distribution of abortion services continued to be markedly uneven. Eighty-two percent of all U.S. counties—50 percent of those classified as metropolitan and 91 percent of those classified as nonmetropolitan—lacked an abortion provider in 1985.

The long-term trend away from hospital abortions persisted during the period: Eighty-seven percent of the abortions performed in 1985 were done in nonhospital facilities, an increase of five percentage points over the 1982 level. Although abortion clinics constituted only 15 percent of all providers, they were responsible for 60 percent of the procedures performed in 1985.

Among all abortion facilities, only 43 percent provided services to women after the 12th week of pregnancy. Abortion clinics were far more likely to offer second-trimester procedures than were other types of abortion providers (75 percent, compared with 13–50 percent).

As of mid-1986, charges for a first-trimester nonhospital abortion ranged from $75 to nearly $900. The average amount paid was $213. In 1985, only 39 percent of nonhospital abortion facilities accepted state reimbursement for abortions provided to low-income women, and only 55 percent of facilities offered some reduction in charges to such women.

Methodology

To monitor the availability and utilization of abortion services in the United States, The Alan Guttmacher Institute (AGI) has conducted periodic national surveys of all known abortion providers. The ninth such survey, covering the years 1984–1985, was fielded in 1986. (The previous survey, for the years 1981–1982, was conducted in 1983.) Questionnaires were sent to all hospitals, clinics and doctors' offices known to have provided abortions in 1981 or 1982 or thought to have provided them more recently. Possible new providers were identified through queries to the executive directors of all Planned Parenthood affiliates and the state coordinators of the National Abortion Rights Action League; from lists provided by some state health departments, through newspaper articles from a national clipping service, and by checks of the telephone yellow pages of all U.S. cities. We believe that these sources furnished the names of virtually all facilities that advertise their services or that receive significant numbers of patients through referrals.

The information solicited in the questionnaire included the numbers of abortions provided in 1984 and 1985, the numbers of second-trimester procedures, gestational limits for the performance of abortion and experience with antiabortion harassment.* In addition, nonhospital facilities were asked about the proportion of services related to abortion, usual charges, special provisions for low-income patients, use of anesthesia, and security, insurance and other service problems possibly linked to the provision of abortion.

Two or three follow-up letters were sent to facilities that did not respond to the questionnaire. If there was still no response, we used state health department data for individual facilities, if available. Otherwise, we attempted to elicit the information by telephone. Unless a provider flatly refused to participate, a minimum of three calls were made to almost all of the facilities that did not respond, and at least six calls (and sometimes twice that many) were made to facilities thought to have provided 400 or more abortions. In most of the few instances in which these efforts were unsuccessful, we obtained estimates from knowledgeable persons in the community. Information obtained by telephone or from sources other than the completed questionnaire consisted of the number of abortions provided in 1984 and 1985 and, in some cases, the maximum gestation at which abortions were performed.†

These efforts enabled us to obtain information for 94 percent of the known or anticipated abortion providers—a proportion somewhat lower than the 96 percent attained in the previous survey. In 1986, many hospitals and nonhospital facilities were reluctant to provide any information about abortion because of fear of antiabortion harassment; many had already been the targets of protesters. Year-to-year comparisons of the number of providers need to take into account the increased rate of nonresponse. If all the nonrespondents in the most recent survey are assumed to have performed abortions in 1985, then the total number of providers has been undercounted by 87 facilities (three percentage points) more than it was in the prior survey.

Because the most intensive follow-up efforts were concentrated on the larger provid-

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*For a detailed analysis of the data on harassment, see: J. D. Forrest and S. K. Henshaw, "The Harassment of U.S. Abortion Providers," *Family Planning Perspectives*, 19:9, 1987.

†For a more detailed explanation of the survey methodology, which was essentially the same as that used in 1983, see: S. K. Henshaw and E. Blaine, eds., *Abortion Services in the United States, Each State and Metropolitan Area, 1981–1982*, The Alan Guttmacher Institute, New York, 1985, pp. 51–60.

Table 1. Number of reported abortions and number of providers, by metropolitan status;* rate of abortions per 1,000 women aged 15–44; and ratio of abortions per 1,000 abortions plus live births; United States, 1973–1985

Measure and metropolitan status	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
No. of abortions (in 000s)	**744.6**	**898.6**	**1,034.2**	**1,179.3**	**1,316.7**	**1,409.6**	**1,497.7**	**1,553.9**	**1,577.3**	**1,573.9**	**1,575.0**	**1,577.2**	**1,588.6**
Metro	720.2	860.7	985.7	1,123.3	1,258.0	1,345.2	1,430.9	1,507.7	1,538.3	1,537.3	u	1,543.9	1,556.4
Nonmetro	24.4	37.9	48.5	56.0	58.7	64.4	66.8	46.2	39.0	36.6	u	33.3	32.2
No. of providers	**1,627**	**2,028**	**2,398**	**2,567**	**2,688**	**2,753**	**2,734**	**2,758**	**2,896**	**2,908**	**u**	**2,710**	**2,680**
Metro	1,302	1,615	1,903	2,036	2,139	2,198	2,213	2,318	2,447	2,460	u	2,362	2,350
Nonmetro	325	413	495	531	549	555	521	440	449	448	u	348	330
Abortion rate	16.3	19.3	21.7	24.2	26.4	27.7	28.8	29.3	29.3	28.8	28.5	28.1	28.0
Abortion ratio†	193	220	249	265	286	294	297	300	301	300	304	297	298

*For 1973–1979, metropolitan status has been defined according to criteria published by the Office of Management and Budget (OMB), Oct. 1975. For 1980–1985, new definitions by the OMB based on the 1980 census have been used.

†For each year, the ratio is based on births occurring during the 12-month period starting in July of that year (to match times of conception for pregnancies ending in births with those for pregnancies ending in abortions).

Note: u = unavailable.

Sources: **Abortion and provider data**— For 1973–1982, see reference 1, Table 1. For 1983, estimate interpolated between 1982 and 1984 numbers. For 1984–1985, AGI abortion survey. **Population data**— For 1973–1982, see reference 1, Table 1. For 1983–1985, U.S. Bureau of the Census, "Estimates of the Population of the United States, by Age, Sex, and Race: 1980 to 1985," *Current Population Reports*, Series P-25, No. 985, 1986, Table 2. **Birth data**— For 1973–1980, see reference 1, Table 1. For 1981–1984: National Center for Health Statistics (NCHS), "Advance Report of Final Natality Statistics," *Monthly Vital Statistics Report*, Vol. 32, No. 9, Supplement, 1983 [for 1981]; Vol. 33, No. 6, Supplement, 1984 [for 1982]; Vol. 34, No. 6, Supplement, 1985 [for 1983]; and Vol. 35, No. 4, Supplement, 1986 [for 1984]. For 1985, NCHS, "Births, Marriages, Divorces and Deaths for June 1986," *Monthly Vital Statistics Report*, Vol. 35, No. 6, 1986.

ers, the abortion totals for 1984 and 1985 are probably about as accurate as those for previous years. Facilities for which no data could be obtained for 1984–1985 had provided about 22,000 abortions in 1982; the comparable figure in the previous survey had been 20,000.

In addition to missing facilities because they do not respond, the AGI surveys unavoidably overlook some providers, mainly small ones, because they have not been identified. The survey covering 1982 is believed to have undercounted the number of abortions performed in physicians' offices by 110,000.[1] This undercount, however, may have been partly offset by a tendency, noted in other surveys, for physicians to overestimate the number of abortions they provide. The latest estimate (made for 1978) of the number of uncounted hospital abortions is 800.[2] The number of clinic abortions not counted has not been estimated but is probably small, since identifying clinics that offer abortion services is relatively easy.

Typically, the number of abortions reported to the AGI has been higher than the number reported to the Centers for Disease Control (CDC), the other source of national data on abortion.[3] The CDC data for most states are based on summary information furnished by the state health departments, which may receive no information from some providers and incomplete information from others.* Therefore, the AGI figures for the nation as a whole and for most states are believed to be more accurate.

Numbers, Rates and Ratios

As Table 1 shows, the annual number of abortions rose steadily between 1973 and 1981 and then stabilized. In 1985, 1.59 million procedures were performed, a number not significantly different from the 1.58 million of 1984 or the 1.57 million of 1982.† In contrast, the number of abortion providers has declined significantly over the past few years: In 1985, there were 2,680 providers, eight percent fewer than in 1982. Even when the higher rate of nonresponse in the 1984–1985 survey is taken into account, a significant decrease of five percent is still evident.

The abortion rate of 28 per 1,000 women aged 15–44 in 1985 means that almost three percent of women of childbearing age had an abortion during the year. The rate has fallen from a high of 29 in 1981; the decline is almost exactly what one would expect to occur as a result of the decreasing proportion of 15–24-year-olds (the age-group with the highest abortion rate) within the population of women of reproductive age.

The abortion ratio of 298 for 1985 may be interpreted to mean that 30 percent of pregnancies not ending in miscarriage or stillbirth were terminated by abortion (the proportion is 25 percent when estimated miscarriages and stillbirths are taken into account). Since 1979, the abortion ratio has fluctuated within the narrow range of 297–304.

Geographic Availability

As Table 1 indicates, abortion services remain unavailable in many areas of the United States, particularly rural communities and small towns. Only 32,000 abortions, or two percent of the national total, were provided outside of metropolitan areas during 1985. Both the number and the proportion have fallen since the late 1970s, when almost five

Table 2. Percentage of counties with no abortion providers and with no providers reporting 400 or more abortions, and percentage of women aged 15–44 living in those counties, by metropolitan status,* 1985

Measure	Total	Metro	Nonmetro
Counties (N=3,135)			
With no provider	82	50	91
With no provider reporting ≥400 abortions	92	65	99
Women 15–44 (N=56,755,000)			
Living in counties with no providers	30	15	79
Living in counties with no provider reporting ≥400 abortions	43	26	98

*Defined according to criteria published by the OMB after the 1980 census.

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*Not all states require the reporting of abortions. Moreover, states that do have reporting systems differ in the types of providers that must report, in the completeness of the information supplied, and in the follow-up performed by the states' health departments.

†There was no survey covering 1983. The figure that we estimated for 1983 in an earlier article—1.51 million—may have been too low. That estimate was based on trends in state health department reports, and the latest AGI survey data suggest that the completeness of the state reports has been decreasing. Our new estimate is 1.58 million. (See S. K. Henshaw, "Trends in Abortions, 1982–1984," *Family Planning Perspectives*, 18:34, 1986.)

percent of abortions took place in nonmetropolitan areas. Similarly, the number of providers located in nonmetropolitan areas has declined since 1978. Although some of the change may be an artifact of increased rates of nonresponse among small providers in the last few AGI surveys, the survey results suggest that services in nonmetropolitan areas have contracted.

Another measure of the availability of services is the proportion of counties with abortion providers. Women who live in counties that lack such facilities can travel to other jurisdictions, but the need to travel can impose substantial hardships, especially on teenagers and low-income women, and can be an insurmountable barrier. Eighty-two percent of U.S. counties have no identified providers of abortion services; these counties are home to 30 percent of all women aged 15–44 (see Table 2). Furthermore, in some of the counties that have providers, very few women obtain abortions, possibly because a local physician serves only his or her own established patients, or because the local physician or hospital is willing to provide abortions only under limited or rare circumstances. Therefore, the existence of a facility that provides 400 or more abortions per year (and so presumably can be easily located by potential patients) is a better indication of service availability than is just the presence of a provider.

As the table reveals, 92 percent of counties, where 43 percent of women live, have no such large-scale facility. Among nonmetropolitan counties, 99 percent have no large-scale providers, and 91 percent have no abortion providers at all. Seventy-nine percent of all nonmetropolitan women live in counties with no providers. While metropolitan counties are much better served, coverage is far from complete: Sixty-five percent have no providers that report at least 400 abortions per year, and half have none. No more than 40 abortions were performed in each of 81 of the nation's 305 standard metropolitan statistical areas (SMSAs) in 1985,* although most of these are small SMSAs, at least 400 abortions would have been performed in each if its abortion rate had approached the national average. Sixty-four of the 81 SMSAs had no identified abortion providers.

Since 1982, the proportion of counties with no providers has risen (from 78 percent to 82 percent), and the increase has occurred in both nonmetropolitan and metropolitan

Table 3. Number of reported abortions, rate per 1,000 women aged 15–44 and absolute change in rate, by state of occurrence, 1982, 1984 and 1985

State	Number of abortions			Abortion occurrence rate			
	1982	1984	1985	1982	1984	1985	Change, 1982–85
Total	**1,573,920**	**1,577,180**	**1,588,550**	**28.8**	**28.1**	**28.0**	**−0.8**
Ala.	19,930	19,210	19,380	21.6	20.3	20.2	-1.4
Alaska	1,930	3,170	3,450	17.0	26.2	27.7	+10.7
Ariz.	15,830	21,190	22,330	23.4	29.2	29.9	+6.5
Ark.	6,660	4,680	5,420	12.9	8.8	10.1	-2.8
Calif.	265,740	297,730	304,130	44.5	47.8	47.9	+3.4
Colo.	25,170	24,600	24,350	32.2	29.8	28.8	-3.4
Conn.	23,180	21,490	21,850	31.8	29.0	29.3	-2.5
Del.	3,870	4,710	4,590	26.5	31.8	30.9	+4.4
D.C.	28,630	23,690	23,910	169.9	142.9	145.9	-24.0
Fla.	76,910	75,800	76,650	34.8	32.3	31.8	-3.0
Ga.	38,480	38,710	38,340	27.7	26.8	26.1	-1.6
Hawaii	9,140	10,430	11,160	37.9	41.6	43.7	+5.8
Idaho	3,020	2,740	2,660	13.4	11.6	11.1	-2.3
Ill.	65,860	65,940	64,960	24.4	24.2	23.8	-0.6
Ind.	15,680	16,070	16,090	12.1	12.2	12.2	+0.1
Iowa	8,230	10,430	9,930	12.6	15.8	15.0	+2.4
Kans.	14,440	12,420	10,150	26.6	22.4	18.2	-8.4
Ky.	10,830	10,090	9,820	12.5	11.4	11.0	-1.5
La.	22,310	20,730	19,240	21.3	19.1	17.4	-3.9
Maine	5,470	5,180	4,960	21.1	19.6	18.6	-2.5
Md.	34,810	29,120	29,480	32.7	26.8	26.9	-5.8
Mass.	41,250	36,340	40,310	30.2	26.4	29.3	-0.9
Mich.	64,190	66,010	64,390	29.0	29.6	28.7	-0.3
Minn.	19,020	17,410	16,850	19.4	17.3	16.6	-2.8
Miss.	5,500	5,490	5,890	9.3	9.1	9.7	+0.4
Mo.	19,780	22,140	20,100	17.4	19.2	17.3	-0.1
Mont.	4,230	3,880	3,710	22.5	20.1	19.0	-3.5
Nebr.	6,580	6,730	6,680	18.3	18.4	18.2	-0.1
Nev.	9,960	9,370	9,910	46.0	39.8	40.5	-5.5
N.H.	5,600	6,740	7,030	24.5	28.3	29.0	+4.5
N.J.	61,080	65,860	69,190	35.7	37.9	39.6	+3.9
N.Mex.	7,470	5,380	6,110	22.8	15.6	17.4	-5.4
N.Y.	182,700	192,020	195,120	44.5	46.6	47.4	+2.9
N.C.	33,230	35,800	34,180	23.0	24.0	22.6	-0.4
N.Dak.	3,350	2,940	2,850	22.4	19.3	18.5	-3.9
Ohio	61,440	58,040	57,360	24.3	22.7	22.4	-1.9
Okla.	12,690	12,630	13,100	17.6	16.8	17.1	-0.5
Oreg.	16,350	15,310	15,230	25.2	22.8	22.3	-2.9
Pa.	64,060	60,680	57,370	24.1	22.6	21.3	-2.8
R.I.	7,770	7,450	7,770	35.8	34.1	35.5	-0.3
S.C.	16,140	11,280	11,200	20.7	14.0	13.7	-7.0
S.Dak.	1,770	1,770	1,650	11.6	11.4	10.6	-1.0
Tenn.	26,100	22,570	22,350	23.3	19.5	19.1	-4.2
Tex.	105,820	99,960	100,820	29.2	26.0	25.5	-3.7
Utah	4,180	4,240	4,440	11.4	10.9	11.1	-0.3
Vt.	3,710	3,450	3,430	29.4	26.7	26.2	-3.2
Va.	34,880	31,670	34,180	25.7	22.6	24.0	-1.7
Wash.	34,130	29,510	30,990	32.9	27.2	28.0	-4.9
W.Va.	3,420	4,680	4,590	7.7	10.4	10.1	+2.4
Wis.	20,380	18,640	17,830	18.5	16.6	15.7	-2.8
Wyo.	1,020	1,060	1,070	8.4	8.1	7.9	-0.5

Notes: In this and subsequent tables, numbers of abortions are rounded to nearest 10. Rates are based on population estimates for July 1 of each year; estimates have been made by interpolating between 1980 census data and unpublished population estimates for 1985 provided by Market Statistics, New York.

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*An SMSA consists of a county containing a city of 60,000 or more people, plus any surrounding metropolitan counties. All metropolitan counties are included in SMSAs. A list of the SMSAs having few or no abortion services is available from the authors.

Table 4. Number of abortions by state of occurrence, and number and percentage provided to nonresidents; number of abortions by woman's state of residence, and number and percentage obtained out of state; and resident abortion rate per 1,000 women 15–44; 1982

State	Abortions by state of occurrence			Abortions by woman's state of residence			Resident abortion rate
	Total	Obtained by nonresidents		Total	Obtained out of state		
		No.	%		No.	%	
Total	**1,573,920**	**110,150**	**7**	**1,565,030***	**101,260***	**6**	**28.6**
Ala.	19,930	1,300	7	20,470	1,840	9	22.1
Alaska	1,930	0	0	2,350	420	18	20.7
Ariz.	15,830	530	3	15,960	660	4	23.5
Ark.	6,660	240	4	8,270	1,850	22	16.0
Calif.	265,740	1,260	†	266,370	1,890	1	44.5
Colo.	25,170	1,810	7	23,620	260	1	30.2
Conn.	23,180	490	2	24,610	1,920	8	33.7
Del.	3,870	840	22	3,730	700	19	25.5
D.C.	28,630	13,950	49	15,390	710	5	91.1
Fla.	76,910	3,390	4	74,070	550	1	33.5
Ga.	38,480	3,950	10	37,260	2,730	7	26.8
Hawaii	9,140	70	1	9,080	10	†	37.6
Idaho	3,020	210	7	3,460	650	19	15.3
Ill.	65,860	2,120	3	67,790	4,050	6	25.1
Ind.	15,680	490	3	20,490	5,300	26	15.8
Iowa	8,230	820	10	9,290	1,880	20	14.2
Kans.	14,440	5,530	38	9,670	760	8	17.8
Ky.	10,830	4,230	39	9,710	3,110	32	11.2
La.	22,310	2,080	9	23,730	3,500	15	22.6
Maine	5,470	820	15	5,410	760	14	20.9
Md.	34,810	2,080	6	43,130	10,400	24	40.4
Mass.	41,250	1,650	4	42,670	3,070	7	31.2
Mich.	64,190	1,930	3	63,270	1,010	2	28.5
Minn.	19,020	2,350	12	17,450	780	4	17.7
Miss.	5,500	390	7	8,020	2,910	36	13.6
Mo.	19,780	2,750	14	22,730	5,700	25	20.0
Mont.	4,230	960	23	3,440	170	5	18.3
Nebr.	6,580	1,440	22	5,650	510	9	15.7
Nev.	9,960	1,610	16	8,720	370	4	40.3
N.H.	5,600	1,570	28	4,780	750	16	20.9
N.J.	61,080	1,340	2	65,630	5,890	9	38.3
N.Mex.	7,470	270	4	8,960	1,760	20	27.3
N.Y.	182,700	9,480	5	175,230	2,010	1	42.6
N.C.	33,230	1,950	6	33,320	2,040	6	23.0
N.Dak.	3,350	1,860	56	1,740	250	14	11.6
Ohio	61,440	3,210	5	60,310	2,080	3	23.8
Okla.	12,690	750	6	15,380	3,440	22	21.4
Oreg.	16,350	970	6	16,240	860	5	25.0
Pa.	64,060	4,080	6	64,010	4,030	6	24.0
R.I.	7,770	2,010	26	6,150	390	6	28.3
S.C.	16,140	1,030	6	17,570	2,460	14	22.5
S.Dak.	1,770	510	29	1,810	550	30	11.8
Tenn.	26,100	4,890	19	23,000	1,790	8	20.5
Tex.	105,820	9,420	9	98,030	1,630	2	27.0
Utah	4,180	250	6	4,150	220	5	11.3
Vt.	3,710	960	26	3,060	310	10	24.2
Va.	34,880	2,030	6	38,500	5,650	15	28.3
Wash.	34,130	3,040	9	32,140	1,050	3	31.0
W.Va.	3,420	610	18	5,350	2,540	47	12.1
Wis.	20,380	610	3	21,510	1,740	8	19.5
Wyo.	1,020	20	2	2,350	1,350	57	19.3

*Excludes an estimated 8,890 nonresidents of the United States who obtained abortions in the United States.

†Fewer than 0.5 percent.

Sources: **Number of abortions**—AGI survey and unpublished data compiled by the Centers for Disease Control. **Number of women**—see notes to Table 3.

counties (from 87 percent to 91 percent in the former, and from 47 percent to 50 percent in the latter). At the same time, the number of metropolitan counties with no large providers has declined (from 67 percent to 65 percent). Thus, the decline in abortion availability has been concentrated in counties having only a few providers with small caseloads. Some of the decline is an effect of nonresponse to the 1984–1985 AGI survey, but for the most part it stems from a trend toward the provision of services in abortion clinics, which are concentrated in the larger cities. That trend will be discussed in a later section.

The uneven geographic distribution of abortion services is reflected in the widely varying state abortion rates shown in Table 3 (see page 65). In 1985, the highest rate, 48 abortions per 1,000 women aged 15–44, in California,* was six times the lowest rate, eight per 1,000, in Wyoming. Some of the difference may have been due to the higher rate of unintended pregnancy in California. However, there is abundant evidence that the local availability of abortion services has an important effect on the utilization rate;[3] therefore, a low abortion rate may be attributable in part to inadequate services. Besides Wyoming, states with abortion rates under 12 are Arkansas, Mississippi and West Virginia (10 per 1,000), and Idaho, Kentucky, South Dakota and Utah (11 per 1,000). These are predominantly rural states, large areas of which lack abortion services. In addition to California, the states with the highest abortion rates are New York (47), Hawaii (44), Nevada (41) and New Jersey (40). In general, rates are higher on the East and West Coasts than in the interior states.

Until 1982, state abortion rates appeared to be converging, with the highest rates declining (Nevada's, for example) and the lowest rising (South Dakota's). The convergence reflected in part the widening availability of abortion facilities. There has been no additional convergence of rates since 1982, further evidence that the availability of abortion services has stopped increasing.

Table 3 shows the changes in the abortion rates between 1982 and 1985. (Because such changes can be strongly influenced by small errors in the data, they should be interpreted with caution. Errors can be introduced by incomplete or inconsistent reporting of abortions and by inaccurate estimates of the size of the female population aged 15–44.) The largest change is a 24-point decline in the abortion rate of the District of Columbia; the decrease reflects in part the closing of one clinic and a reduction in the caseloads of two other facilities. Although we know of no deficiencies in the data for the District, such a large drop raises questions about the accuracy of the information. The 11-point increase in Alaska reflects the opening of a clinic in a previously unserved area. Similarly, a new clinic accounts for the four-point increase in Delaware. For other states, no specific factors are known that account for observed changes.

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*The highest rate in 1985 was actually the District of Columbia's. However, it is not comparable to the state rates because it applies only to the central city of a large urban area. Central cities typically have high abortion rates among residents and, in addition, are the location of abortion services for many women from surrounding areas.

Each of the southern census divisions—South Atlantic, East South Central and West South Central—registered declines of 2–3 points. The Middle Atlantic and Pacific divisions are the only two that experienced increases in their abortion rates. (Not shown.)

Another measure of the uneven distribution of abortion facilities is the number of women who travel out of state for abortion services. (Interstate travel is particularly common among women who need second-trimester abortions.) In 1982, the latest year for which we have data, six percent of abortions nationwide were performed outside the woman's home state (see Table 4). The proportion was as high as 57 percent for Wyoming residents and 47 percent for those of West Virginia, and was more than 25 percent for the residents of four other states—Indiana, Kentucky, Mississippi and South Dakota. Because of the scarcity of abortion providers in these states and the need to travel long distances for services, some state residents were probably deterred from obtaining abortions, as is evidenced by the relatively low abortion rates even when out-of-state abortions are taken into account. The amounts and patterns of interstate travel for abortion services changed little between 1981 and 1982.

The abortion rates in the last column of Table 4 reflect abortions obtained by state residents, regardless of the place of occurrence. They are therefore better measures of abortion use than are occurrence rates. In the District of Columbia, the 1982 residence rate of 91 is much lower than the 1982 occurrence rate of 170 because many women from Maryland and Virginia go to Washington, D.C., for abortions. In Kansas, North Dakota and Rhode Island, the residence rates are eight or more points lower than the occurrence rates because of the numbers of out-of-state women served. Maryland, Wyoming and several other states, meanwhile, have higher residence than occurrence rates because many of their residents obtain abortions in other states.

Table 5. Number and percentage distribution of abortions and abortion providers, by type of facility, according to caseload, 1985

Caseload*	Total		Hospitals		Abortion clinics		Other clinics		MDs' offices†	
	No.	%	No.	%	No.	%	No.	%	No.	%
Abortions	**1,588,550**	**100**	**207,950**	**13**	**953,480**	**60**	**361,860**	**23**	**65,260**	**4**
<30	6,790	‡	4,720	‡	0	0	200	‡	1,870	‡
30–390	150,030	9	61,940	4	1,890	‡	22,810	1	63,390	4
400–990	205,310	13	55,730	4	35,090	2	114,490	7	na	na
1,000–4,990	919,360	58	68,220	4	652,630	41	198,510	12	na	na
≥5,000	307,060	19	17,340	1	263,870	17	25,850	2	na	na
Providers	**2,680**	**100**	**1,191**	**44**	**399**	**15**	**438**	**16**	**652**	**24**
<30	687	26	517	19	0	0	16	1	154	6
30–390	1,174	44	544	20	9	‡	123	5	498	19
400–990	320	12	92	3	50	2	178	7	na	na
1,000–4,990	455	17	36	1	302	11	117	4	na	na
≥5,000	44	2	2	‡	38	1	4	‡	na	na

*In this and subsequent tables, caseloads are rounded to nearest 10.

†In this and subsequent tables, physicians' offices reporting 400 or more abortions a year are classified as clinics (either abortion or other clinics).

‡Fewer than 0.5 percent. Note: na = not applicable.

The number of residents of other countries who obtained abortions in the United States is estimated at 9,000—5,400 from Canada, 2,000 from Mexico and the remainder mainly from countries in the Caribbean area.

Service Providers

Abortions are performed in hospitals (as inpatient and outpatient procedures), abortion clinics, other kinds of clinics (such as surgicenters) and private physicians' offices. When abortion was legalized nationally, in 1973, most procedures were done in hospitals; but over the years, there has been a pronounced movement toward nonhospital facilities. As Table 5 illustrates, this trend continued in 1985, when only 13 percent of abortions (208,000) took place in hospitals—down from 14 percent in 1984 and 18 percent in 1982 (not shown). The change is the result of a reduction in both the number of hospitals offering abortion services and the average number of abortions performed in each hospital.

The long-term trend away from hospital abortions is due mainly to the cost advantages of nonhospital settings. Even when abortions are performed as day procedures (not requiring an overnight stay), hospital charges are generally much higher than those typical of nonhospital facilities. A 1982 study found that the charge (including the physician's fee) for a first-trimester outpatient abortion in the average hospital was $735, compared with about $190 (in 1981) for a clinic abortion.[5] Furthermore, whereas in the past some insurance policies covered hospital but not clinic procedures, insurance companies have increasingly been restricting their coverage of hospital abortions to procedures that cannot be performed elsewhere. In addition, second-trimester abortions have become more available outside hospitals, making hospitalization medically necessary only for patients undergoing instillation abortions or concurrent surgical procedures, and for patients with preexisting medical conditions.

Along with the general shift away from hospitals has come a rapid movement within the hospital setting away from inpatient and toward outpatient abortion services, which are generally less expensive and more convenient for the patient. Thirty-three percent of hospital abortions were performed as inpatient procedures during 1982, compared with 24 percent in 1984 and 21 percent in 1985. Thus, of all abortions, only three percent involve actual hospitalization. Eighty percent of hospitals that provide abortions permit them to be done as outpatient procedures; as recently as 1980, only 55 percent did so.

Although the number of abortions performed in hospitals has declined, these facilities are still important in making services available. In many U.S. counties, a hospital is the only facility where an abortion can be obtained. Physicians in small communities may judge that existing demand does not justify their equipping their offices to provide abortion services, and such doctors may, therefore, prefer to use hospital facilities. Some doctors also believe that the procedure is more safely performed in a hospital than in their private offices. In addition, hospitals are needed for instillation abortions and for high-risk patients.

Table 6. Number of abortion providers in 1982 and 1985, and change between 1982 and 1985, by type of facility

Type of facility	1982	1985	Change	
			No.	%
Total	**2,908**	**2,680**	**−228**	**−8**
Hospitals	**1,405**	**1,191**	**−214**	**−15**
Public	331	265	−66	−20
Federal	4	0	−4	−100
State	43	40	−3	−7
Hospital district	135	100	−35	−26
County	88	74	−14	−16
City; city/county	61	51	−10	−16
Private	1,074	926	−148	−14
Voluntary, church	63	50	−13	−21
Voluntary, other	806	702	−104	−13
Proprietary	205	174	−31	−15
Nonhosp. facil. by caseload	**1,503**	**1,489**	**−14**	**−1**
Clinics	789	837	+48	+6
<30	14	16	+2	+14
30–390	118	132	+14	+12
400–990	218	228	+10	+5
≥1,000	439	461	+22	+5
MDs' offices	714	652	−62	−9
<30	180	154	−26	−14
30–390	534	498	−36	−7

In 1985, as Table 5 shows, abortions were performed in at least 1,191 hospitals. (The actual number is slightly greater, since some hospitals were reluctant to provide any information, even on a confidential basis.) Hospitals thus constituted 44 percent of all known abortion providers, but they were responsible for only 13 percent of the procedures performed in 1985. Hospital providers tend to have small abortion caseloads: Forty-three percent reported fewer than 30 procedures in 1985, and only three percent reported 1,000 or more.

The nonhospital facilities shown in Table 5 are divided into three categories: abortion clinics, other clinics and physicians' offices. The category "physicians' offices" consists of practices providing fewer than 400 procedures in 1985; practices with larger abortion caseloads (at least 400 procedures in 1985) are grouped with the clinics because they resemble the latter facilities in many respects. "Abortion clinics" are clinics (regardless of caseload) and larger physicians' practices reporting that at least 50 percent of their patients' visits were made for the purpose of abortion.* "Other clinics" are those facilities and larger physicians' practices not meeting that criterion.

Although the 399 abortion clinics made up only 15 percent of providers in 1985, they accounted for 60 percent of all abortions. Eighty-five percent (340) of these clinics reported 1,000 or more procedures. The 438 other (nonabortion) clinics provided 23 percent of all abortions; 28 percent of these facilities provided 1,000 or more abortions each. Almost 25 percent of the providers were physicians' offices, but they accounted for only four percent of all abortions; however, this proportion about doubles when the estimated number of office procedures missed by the survey is included.

Of all abortions performed in 1985, three-quarters took place in facilities having annual abortion caseloads of at least 1,000. The two percent of providers that had caseloads of 5,000 or more were responsible for one-fifth of all abortions.

Since 1977, when a peak of 1,654 hospitals offered abortion services, the number of hospital providers has been declining. As Table 6 shows, between 1982 and 1985 the number of known hospital providers dropped by 15 percent. The reduction was somewhat larger among public facilities than among private ones (20 percent vs. 14 percent). Of the public hospitals other than federal facilities (for which the data are incomplete), hospital-district facilities showed the greatest decline, and state hospitals, the smallest decline. Hospital districts, which are controlled by cooperating jurisdictions, are usually located in smaller cities and rural areas; state hospitals are generally associated with state medical schools. Within the private sector, the decline in hospital providers was greatest among church-affiliated institutions.

The change in the number of hospital providers was the net result of some providers' discontinuing services and some facilities' offering services for the first time. The change was greatest among providers with small caseloads: Of the hospitals that performed fewer than 30 abortions in 1982, 37 percent no longer performed abortions in 1985. (This rate of discontinuation is higher than that of 30 percent found between 1980 and 1982; the difference may be attributable to the longer time span between 1982 and 1985 than between 1980 and 1982.) Among hospitals that provided larger numbers of abortions in 1982, the discontinuation rate was much lower: eight percent of facilities reporting 30–390 abortions, three percent of those performing 400–990 and two percent of those reporting 1,000 or more. These percentages are not much different from those observed in 1982 among 1980 providers, although we would have expected them to be higher.

A large part of the decline in hospital providers occurred because the number of new hospital providers identified in 1985 was lower than the number found in 1982 (95 compared with 142), even though a larger number might have been expected as a result of the longer time span involved (1982–1985 vs. 1980–1982). Of the hospital providers lost by 1985 and not replaced by new providers, almost all had been performing fewer than 30 abortions a year.

In 1985, the 1,191 hospitals that provided abortions constituted only 21 percent of the country's 5,732 short-term general hospitals; the proportion is 23 percent when Catholic hospitals are excluded. Private non-Catholic general hospitals were more likely to offer services than were public hospitals—26 percent compared with 17 percent.[6]

As the table shows, the number of nonhospital facilities declined slightly between 1982 and 1985. The number of physicians' offices reporting abortions dropped by nine percent, but this decrease was almost balanced by an increase in other nonhospital facilities.

As with the rate among hospitals, the 1982–1985 discontinuation rate among nonhospital providers was greatest for the smallest facilities: It ranged from 37 percent of those reporting fewer than 30 abortions in 1982 to seven percent of those performing 1,000 or more. These proportions are about 50 percent higher, on average, than the proportions of 1980 providers that had terminated services by 1982, but such a difference is to be expected, given the lengths of the two observation periods. Between 1982 and 1985, the number of nonhospital providers that initiated abortion services was greater than the number that discontinued them, in all caseload categories except the smallest (fewer than 30 abortions annually). Most of the smallest providers are physicians' offices.

Gestation

The existence of a provider in a locality does not guarantee that all women needing abortions will be able to obtain them. One difficulty faced by some women is the need to find a facility that will perform the procedure after the 12th week of pregnancy. A substantial number of women who terminate their pregnancies (10 percent in 1983) do so after 12 weeks—some because they have been late in recognizing they are pregnant or have medical reasons for delaying, and others because they have faced geographic, financial or other obstacles. A disproportionate number of women who obtain second-trimester abortions are teenagers.[7]

Table 7 shows that 57 percent of providers do not perform abortions when a woman is more than 12 weeks from her last menstrual period (LMP); 11 percent do not provide services past eight weeks. Abortion clinics are far more likely to offer second-trimester procedures than are other providers—75 percent, compared with 46–50 percent of other clinics and hospitals and 13 percent of physicians' offices. These differentials are to be expected, since providers with smaller caseloads may not find it worthwhile to undergo or institute the additional training needed to perform second-trimester abortions.

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*Clinics and physicians' offices that did not provide information about the percentage of patient visits made for abortion were classified as abortion clinics if they reported 1,000 or more abortions (clinics) or 1,500 or more abortions (physicians' offices).

Since 1982, the proportion of providers offering services after 12 weeks LMP has increased substantially, from 33 percent to 43 percent. The increase has been especially great among abortion clinics—from 58 percent to 75 percent. One of the factors contributing to the change was a 1983 Supreme Court ruling that states may not require early second-trimester abortions to be performed in hospitals. Several federal court rulings have since found bans on nonhospital abortions during the middle of the second trimester to be similarly unconstitutional.

Abortion Charges and Subsidies

Since women who obtain abortions usually must pay for them with cash in advance,* the cost may be an important barrier for poor women and for teenagers. As of mid-1986 (when the survey questionnaire was filled out), the average amount paid for a nonhospital abortion performed at 10 weeks LMP with local anesthesia was $213 (see Table 8). Many women pay more than that amount, some because their abortions are performed at later gestations, and many others because of additional costs for transportation, extra lab tests and medication needed in certain cases, and other miscellaneous expenses. The income that some women lose because of time missed from work should also be figured in to the cost of an abortion. On the other hand, the average cost does not take into account either the state funds for abortions for low-income women that are available in 14 states and the District of Columbia, or the reduced rates offered by some facilities to certain low-income women.

Table 7. Percentage distribution of abortion providers, by maximum gestation (weeks LMP) at which they perform abortions, according to type of provider, 1985

Weeks LMP	Total* (N = 1,803)	Hospitals (N = 645)	Abortion clinics (N = 330)	Other clinics (N = 346)	MDs' offices (N = 482)
5–6	2	2	0	†	4
7–8	9	9	1	2	17
9–10	12	9	4	10	26
11–12	34	34	20	38	40
13–14	11	6	21	21	7
15–16	8	5	21	13	3
17–20	17	26	21	13	2
≥21	7	9	12	3	1
Total	100	100	100	100	100

*Standardized to actual percentage distribution of abortion providers, to account for differences in response rates by type of provider.

†Fewer than 0.5 percent.

Table 8. Mean charge and range of charges in 1986 for a nonhospital abortion at 10 weeks LMP with local anesthesia, by 1985 caseload; and mean amount paid; according to type of facility

Measure and caseload	Total	Abortion clinics	Other clinics	MDs' offices
Mean amount charged*	**$238 (992)**	**$209 (336)**	**$235 (324)**	**$272 (332)**
<30	306 (52)	0 (0)	310 (6)	306 (46)
30–390	266 (369)	192 (8)	275 (75)	266 (286)
400–990	223 (178)	214 (47)	226 (131)	na
1,000–4,990	211 (355)	209 (247)	216 (108)	na
≥5,000	203 (38)	204 (34)	191 (4)	na
Range	75–897	100–615	100–897	75–650
Mean amount paid†	**$213 (1,166,000)**	**$208 (815,000)**	**$219 (312,000)**	**$260 (39,000)**

*Averaged over the number of facilities (shown in parentheses).

†Averaged over the number of abortions (shown in parentheses).

Note: na = not applicable.

As Table 8 shows, facilities with larger caseloads have lower average charges, evidently reflecting economies of scale. Facilities that provide 5,000 or more abortions charge a mean of $203, whereas those with caseloads under 30 charge $306. Abortion clinics tend to charge somewhat less than do other types of clinics and doctors' offices.

Charges for a first-trimester abortion range from $75 to almost $900. Since most women utilize facilities at the lower end of the cost spectrum, the average amount they pay ($213) is less than the amount charged by the average facility ($238).

In facilities that offer a choice of local or general anesthesia, the latter costs an additional $107, on average (not shown). The charge for general anesthesia is lowest in abortion clinics ($67) and highest in physicians' offices ($181). Only a minority of facilities offer general anesthesia: 37 percent of abortion clinics, 25 percent of other clinics, 13 percent of physicians who perform abortions in their offices, and 26 percent of all nonhospital providers combined.

The cost of abortion services has risen less rapidly than has the cost of other types of medical care. Between 1983 and 1986, the average amount paid for a first-trimester nonhospital abortion rose by seven percent, from $200 to $213,[8] while the consumer price index for medical care rose by 21 percent.[9] Price increases were about the same in both groups of clinics and physicians' offices.

The average amount paid for an abortion varies significantly by state. Most expensive, averaging $300 or more, are services in Alaska, Hawaii and South Dakota. Other states with relatively high average costs (over $240) are Idaho, Iowa, North Dakota, Oklahoma, Utah and Wyoming. Most of these are less-urbanized states, where community pressures may make it difficult for facilities to offer abortion services and where there are few providers to stimulate competition. Women pay less than $190, on average, in Delaware, Nevada, Oregon, Virginia and Washington, plus the District of Columbia. (The average is also below $190 in Rhode Island, but price information is available from only two facilities.)

The relatively few women who obtain abortions from nonhospital facilities in nonmetropolitan areas pay an average of $37 more than do women who utilize such facilities in metropolitan areas. Nonmetropolitan facilities tend to have small abortion caseloads, but the cost differential remains even when caseload is controlled for.

Low-income women have two main sources of help in paying for abortions: public funding through the Medicaid mechanism, and providers who are willing to offer services at reduced fees or no charge. Since 1977, virtually no federal Medicaid funds have been used to subsidize abortions, and only a minority of states have used their own monies to fund abortions. In 1985, 14 states† and the District of Columbia covered the cost of some 187,500 abortions obtained by indigent women.[10] Those procedures amounted to 22 percent of abortions provided in all facilities, including hospitals, in those states. (Since 1982, public funding for abortions has

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*Few women use insurance to pay for abortions. See: S. K. Henshaw and L. S. Wallisch, "The Medicaid Cutoff and Abortion Services for the Poor," *Family Planning Perspectives*, 16:170, 1984.

†Alaska, California, Connecticut, Hawaii, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Oregon, Vermont, Washington and West Virginia.

Table 9. Percentage of nonhospital abortion providers that accept state payments for at least two percent of their abortion payments, and percentage of abortions paid for with state funds, in all states and in funding states; percentage of nonhospital providers that offer reduced fees, and percentage of abortions provided at reduced fee; by type of provider, 1985

Measure	Total (N = 831)	Abortion clinics (N = 244)	Other clinics (N = 258)	MDs offices (N = 329)
State funds				
Providers accepting for ≥2% of patients				
All states	39	29	52	37
Funding states	73	75	85	61
Abortions paid for*				
All states	10	8	11	11
Funding states	19	17	22	17
Reduced fee†				
Providers offering to ≥2% of patients	55	59	59	49
Abortions provided at reduced fee*	7	6	9	9

*Weighted by the number of abortions provided. †Includes abortions provided without charge.

been terminated by Colorado and Pennsylvania and has been instituted by Vermont.) Even when the state covers abortions, not every provider will accept the state's reimbursement, which is usually lower than the provider's customary fee, involves extra paperwork and may be delayed.

Table 9 illustrates the degree to which abortion services are subsidized. Thirty-nine percent of nonhospital providers accept public funding for at least two percent of their abortion patients. The proportion accepting state reimbursement is lower among abortion clinics (29 percent) and physicians' offices (37 percent) than among other clinics (52 percent). When the analysis is limited to providers in states that fund abortions for poor women, the overall proportion rises to 73 percent, but it remains lower among abortion clinics and private doctors than among other clinics. Nonhospital facilities in funding states report that 19 percent of the abortions they provide are paid for by the state.

As these statistics indicate, state abortion funding is a major source of income for relatively few facilities. Only one-fourth of the abortion clinics located in the funding states report that 25 percent or more of their patients rely on the state to pay for their abortions. The proportion of other clinics is slightly higher—one-third—but since most of the services they provide are not abortion-related, these facilities are not dependent on state abortion funds for a large part of their income. (Not shown.)

Low-income patients unable to obtain publicly funded coverage for their abortions can sometimes obtain services at reduced cost or, more rarely, at no cost. Table 9 shows that 55 percent of nonhospital providers offer some reduction in charges to at least two percent of their patients. On average, seven percent of all patients in nonhospital facilities are charged reduced fees. Private doctors and clinics that do not specialize in abortion are more generous in allowing reduced rates than are abortion clinics.

Discussion

Some important changes have occurred in the provision of abortion services in recent years. Since 1982, the number of hospital abortion providers has continued its long-term decline, and the pace of that decline has accelerated. The principal reasons for the shift to nonhospital facilities are undoubtedly the lower cost and greater convenience of clinic abortions. However, the pattern of change in the number of providers raises the question of whether antiabortion pressures may also have played a role. The decline in hospital facilities was greatest among those controlled by hospital districts and among church-affiliated institutions. One might expect these types of hospitals to be especially subject to pressure, the former because they tend to be located in small towns, where antiabortion sentiment is likely to be strong, and the latter because many religious groups have strong antiabortion factions. If in fact antiabortion activity has had an effect, it evidently has been at least as much by preventing hospitals from initiating abortion services as by forcing those providing services to stop. Any such effect has been on small providers only; there is no statistical evidence that hospitals providing 30 or more abortions a year have been induced to stop.

The number of private doctors providing abortions to relatively small numbers of patients has also decreased since 1982. The reduction in the number of hospital and physician providers has been particularly pronounced in nonmetropolitan areas. The proportion of nonmetropolitan counties with services, while always low, has fallen to just nine percent, and the proportion of abortions performed in nonmetropolitan areas is at a new low of 2.0 percent. Small cities have been affected as well, as indicated by the increase (from 72 to 81) in the number of SMSAs reporting few or no abortions.

The cutoff of state funding of abortion in Colorado and Pennsylvania, only partly offset by new state funding in Vermont, has also reduced access to abortion services.

In two respects, however, access has improved since 1982. The number of nonhospital providers serving 400 or more women a year has increased slightly, and a larger proportion of urban counties now have such a provider. Perhaps more important, a larger proportion of abortion facilities now perform second-trimester procedures, making services available to more of the women who need later pregnancy terminations.

Despite the changes in the pattern of service availability between 1982 and 1985, the abortion rate has remained stable. Possibly the loss of services in nonmetropolitan areas has been offset by the improvements that have occurred.

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Comment

Trends in Health Care Financing: Opportunities for Family Planning Agencies

By Bobbie Wunsch and Barbara Aved

Introduction

Health care costs in the United States have risen by about 13 percent a year for the past decade—double the inflation rate of the rest of the economy.[1] These spiraling costs are the result of a broad range of forces that influence the delivery and use of health care in this country. They include rapid advances in medicine, which put pressure on the medical profession to offer patients the benefit of increasingly sophisticated—and expensive—technology, payment systems that have not encouraged the economic use of resources, and soaring rates of malpractice and product liability insurance. In response to these trends, a number of alternative health care delivery systems have evolved, propelled by the fact that individual and corporate consumers of health care are faced with increasing insurance costs, reduced benefits, higher copayments and higher deductibles.

At the same time that these trends are occurring in the general health care marketplace, the delivery of subsidized family planning services in particular is being affected by declining levels of government support. Between 1980 and 1985, for example, public expenditures for contraceptive supplies and services channeled through the four major support programs (Title X of the Public Health Service Act, Titles V and XX of the Social Security Act and Medicaid) declined from approximately $342 million in constant dollars to around $300 million—a 12 percent reduction.[2]

The long-term implications of these two converging trends—changes in health care delivery systems and in family planning funding sources—may not be immediately apparent to the administrators of family planning agencies. Some may not be well prepared to meet these new challenges. Leadership at the state and national levels has been slow to recognize the need to acquaint family planning administrators with the changes that are occurring and to encourage their participation in planning efforts to meet the problems created by such changes. This has been particularly true in the area of Medicaid pilot projects, which we shall address in this article. It will become increasingly important that those responsible for delivering family planning services become aware of some of the possible strategies to increase their funding base.

In addition, we describe some of the ways in which family planning administrators (particularly in the private sector, which has been hardest hit by cuts in funding) have begun to respond to new patterns of health care delivery and financing. We also recommend ways in which administrators might compete more successfully in the health care marketplace.

New Health Care Models

A number of alternative delivery systems now challenge the traditional fee-for-service solo and small-group practices that dominated primary health care in the United States until the mid-1970s. The most rapidly growing of these new systems is the health maintenance organization (HMO), which provides a voluntarily enrolled population a guaranteed, specific range of physician and hospital services in return for a fixed periodic payment that does not change with the degree to which those services are used. There are three types of HMO: the group model, in which doctors are members of a partnership or service corporation that contracts with employers or individuals to provide medical services; the staff model, in which physicians are direct employees of the HMO; and the independent practice association (IPA) model, a physicians' group that enters into a contract with an HMO and receives reimbursement for every patient seen. In the first two models, doctors deliver health care in centers owned or operated by the HMO. In the IPA model, doctors work from their own premises, which means that they can continue to see other private patients.[3]

In 1986, more than 21 million Americans were enrolled in approximately 262 HMOs around the country. This number represents slightly more than a two percent increase since 1984.[4] In California, about 30 percent of the population covered by some form of health insurance is enrolled in an HMO.[5] In Wisconsin, this proportion is 46 percent,[6] and in Minnesota, it is 53 percent.[7] Of the three types of HMO, the IPA model appears to be growing at the most rapid rate.

Research on HMOs shows them to be unequaled in their success at reducing hospital utilization; they have achieved savings of hospital costs of 20–40 percent.[8] These are important accomplishments, considering that hospital costs consume nearly half of every dollar spent on health care in the United States.[9]

Another system for delivering and financing health care is the preferred provider organization (PPO). Under this system, patients are assigned to a designated panel of health care providers who offer services according to a discounted* fee schedule. There is no formal risk-sharing among the doctors enrolled in a PPO (as there is among physicians working in an HMO), but the review and control of patients' use of services are strongly emphasized, as they are in HMOs. In addition to PPOs and HMOs, new hybrid

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*Physicians offer the employer medical services for employees at a discounted cost in exchange for the guarantee of referrals to their practice only.

systems that combine many of the features of both are being created.

Given the growth of the new health care groups, it is clearly advantageous for family planning agencies to look for ways to initiate working relationships with them. Reciprocally, a number of these health care groups are already aware of the benefits to be derived from an association with a family planning agency. Others are not, however. Some of the new health plans, for example, are not equipped to provide women with the full range of reproductive health services, even though they may acknowledge the need for such services; some are reluctant or unwilling to offer abortion services. Other health care groups do not realize that family planning clinics already have a long and impressive record in the areas of birth control, sexually transmitted diseases and general gynecologic care.

Some additional features that family planning agencies can stress when attempting to market their services are the following. Clinics often have bilingual or bicultural staff; they can offer professionally produced educational materials; and they have a high proportion of female clinicians, whom many women prefer to see when they are seeking birth control or other gynecologic services. Moreover, many family planning agencies have successfully served large numbers of young clients, a factor that can be an added attraction to an HMO that lacks such experience.

Some Recent Initiatives

The following projects provide examples of some of the ways in which family planning agencies in the private sector have begun to respond to the changing health care delivery system in the United States:

- In Orange County, California, a family planning agency developed a plan that offers women a full range of nonsurgical reproductive health care (including prescription contraceptives) for the prepaid price of $96 a year. The agency is a large one, serving about 8,000 contraceptive clients in five sites throughout the county. It receives both Title X and state subsidies for low-income women. To prepare for the program, and to make it more acceptable to private patients, the agency redecorated the clinic waiting areas, changed the name of the clinic (eliminating the word "clinic") and gave all staff members new lab coats. It also carried out a general mailing announcing the new plan to a total of 90,000 selected households in the areas around the sites. In addition, the agency installed a new billing system and surveyed all clinic users to assess levels of satisfaction with the services provided.

The program started in 1985. In its first year, 1,200 women enrolled. Most were young, healthy women between the ages of 20 and 30, employed in blue-collar jobs that offer no health benefits. Enrollees in the prepaid plan currently account for seven percent of all medical visits to the agency and 15 percent of the agency's revenues. The annual fee entitles the woman to an initial or annual clinic visit, any follow-up visits necessary, any visits for gynecologic care, contraceptive supplies and all medication prescribed. Patients can pay by charge card or divide the payment into three cash installments (84 percent of enrollees chose this latter system in the program's first year of operation).

- After hearing about the Orange County experiment, a local family planning agency started a similar program in Fort Collins, Colorado. For an annual fee of $90, the agency offers women a package that includes an initial or annual examination, laboratory work, contraceptive supplies, all medication, and pregnancy testing and counseling. The fee can be paid in two installments (for an extra total cost of $5).

Enrollment in the program, which began in early 1986, has been at the rate of about 60 women a month. Since the usual fees at this site are $16 for an initial or annual visit, $9 for lab tests and $7 per pill cycle, women who use oral contraceptives particularly benefit by enrolling in the prepaid plan.

- In Pennsylvania, a number of family planning agencies have been under contract to provide services to members of the International Ladies' Garment Workers' Union (ILGWU). For an annual fee of $75, the agencies provide contraceptive and gynecologic care and diagnosis and treatment of sexually transmitted diseases. In addition, genetic screening and counseling are also available. However, use of any of these services by union members has been low. This may be because neither the agencies nor the union have marketed the program. On the other hand, the ILGWU membership is an aging one, and has few women in the age-group at which these services would primarily be aimed. In addition, because of the decline of the textile industry in this part of the country, membership in the union has been declining rapidly. Nevertheless, the basic design of the program provides an example of how family planning agencies can enter into direct-service contracts with unions or employers.
- In Washington, D.C., a family planning agency has purchased a long-established family planning and abortion clinic and has assumed the management of subcontracts under which abortions are performed for members of three HMOs in the area.
- In Muskegon, Michigan, a family planning agency has entered into a fee-for-service subcontract with a local IPA to provide pregnancy testing, abortion counseling and postabortion checkups for women enrolled in the HMO for which the IPA provides services. Abortion services themselves are provided by private physicians who are members of the IPA.
- In Bristol, Pennsylvania, another local family planning agency is involved in a contract with a branch of a nationwide HMO. The agreement covers the provision of vasectomy services on an outpatient basis for men enrolled in the health plan. The agency is paid $325 for each procedure, and this set fee covers surgery, counseling, lab work, anesthesia and follow-up services.
- In San Jose, California, a family planning agency is approaching corporations employing 500 or fewer workers, of whom a good number are women or temporary workers, to promote the reproductive health services offered by the agency's clinics. Since this initiative began, the proportion of paying patients enrolled in the clinics increased from 32 percent of all clients (in 1984) to 49 percent (in 1985).
- In Albuquerque, New Mexico, women enrolled in a newly formed IPA-model HMO petitioned the HMO administrators to be allowed to continue using the local Planned Parenthood clinic for family planning services. As a result, the IPA asked the Planned Parenthood clinic to join the health plan.

The Medicaid Situation

Currently, only about six percent of the revenue generated by family planning agencies is derived from clients whose health care is subsidized by Medicaid. That situation may well change as a result of recent developments in Medicaid reimbursement policies. Traditionally, under the original Medicaid law of 1965, the state reimbursed doctors, hospitals and clinics on a fee-for-service basis, and guaranteed all eligible recipients "freedom of choice" in their selection of a provider. Since 1981, however, states have been permitted to waive this traditional right in an attempt to lower costs. If states decide, for example, that Medicaid patients can be more efficiently served by an HMO, they may mandate enrollment in such a plan. However, an exception to what states may mandate has now been made for family planning. A one-sentence amendment exempting family planning from the states' authority to limit freedom of choice for Medicaid recipients was successfully introduced into the Omnibus Reconciliation Act of April 1986.[10] The amendment is designed to ensure that Medicaid patients will continue to have the right to obtain family planning from a provider of their own choosing.

Studies have shown that Medicaid-eligible women are likely to be more attracted to HMOs if the clinic sites are attractive and are located in areas where other providers are not available, and if the services are conveniently offered.[11] On the other hand, states appear to have been only moderately successful in getting commercial providers to contract for Medicaid services, and in encouraging Medicaid-eligible patients to enroll in the new forms of health delivery.[12] Health plan administrators are unimpressed with the reimbursement rates offered under Medicaid, and are deterred by the amount of red tape that contracting with a state agency often involves. Nevertheless, it is expected that the enrollment of Medicaid patients into the new health care delivery systems will continue, and this trend presents clear opportunities for the organized family planning field.

The following cases document cooperative efforts among family planning agencies, alternative health care delivery systems and state Medicaid programs.

- In 1983, the Wisconsin state legislature enacted several measures designed to reduce health care costs and to stimulate competition among providers. As part of the legislation, Medicaid patients in the Milwaukee area were assigned to a local HMO for health care. As a result, 7,500 women who had previously been served by the local family planning agency were removed from its rolls. These women had accounted for about $86,000 in annual revenues for the family planning agency. Faced by this loss of income, the agency had several choices. It could accept the loss of the Medicaid patients, it could start aggressively marketing its services to the HMOs in the area, or it could itself become an HMO. The final decision, taken after consultation with an outside health care finance specialist and with its own board, was to add infertility services, prenatal care, colposcopy, tubal ligation, vasectomy and abortion services to its reproductive health care package, and then to market that expanded offering to HMOs in the Milwaukee area.

So far, the agency has entered into subcontracts to provide the expanded package to 300 Medicaid-eligible women whose other health care needs are served by the HMO. In the two contracts negotiated, the family planning agency is paid to serve HMO enrollees on a fee-for-service basis. (Pricing the expanded package was complicated, because the services involved had to be carefully differentiated from the full range of primary care offered by an HMO.) If a patient is found to need other types of primary care, he or she is referred to an appropriate provider participating in the HMO.

- In Philadelphia, two family planning agencies are preparing to enter into a contract negotiated by the local family planning council with a nationwide HMO. The state Medicaid program has assigned all Medicaid-eligible patients in a pilot area to this HMO. The success of the negotiations is important for the future of the family planning agencies, one of which has 16 percent of its total caseload of 26,000 currently covered by Medicaid.

These examples suggest that the majority of family planning agencies taking new directions in health care financing are in the private sector. However, we expect that in the future, hospital-based family planning clinics and public health departments will be participants in new organized health care delivery systems at the state and local level.

Unresolved Issues

Most of the newly organized health care delivery systems we have been describing place a great deal of emphasis on utilization control to keep down costs. One of the most commonly used ways of ensuring that patients served by a number of different providers, possibly in a number of different locations, are not subject to duplicated or uncoordinated care is through the primary care case manager. Case management in itself is not a new phenomenon. Until quite recently, case management was one of the roles automatically played by the general practitioner. However, in earlier times, there was less emphasis on cost containment.

Because family planning is a well-defined preventive health service, it generally does not lend itself to excess or inappropriate care, and, therefore, may not be readily adaptable to case management and utilization control systems. On the other hand, family planning services constitute an essential part of primary health care, and participation in a case management system may prove to be of equal benefit to the provider, the client and the HMO.

Case management responsibilities are usually assigned to or assumed by the primary care physician, who must discharge several functions: the provision of basic care; the coordination or authorization of services from other sources (specialists or other facilities); and the maintenance of a general medical record to provide an overall picture of each patient's use of health services. The case manager must also ensure the patient access to round-the-clock care, in order to eliminate the need for use of expensive, and often unnecessary, emergency care. This last requirement also contributes to continuity of care.

However, most organized health care systems now recognize that doctors other than general practitioners are capable of assuming the role of case manager, and in many cases these responsibilities are being assigned to pediatricians, internists and obstetrician-gynecologists. Given this development, it seems logical to anticipate that in the future, some family planning agencies may become case managers. The majority, however, will find themselves being "case-managed" by the HMO or other system that controls the reimbursement process. If that is the case, the family planning agency should develop a menu of services for referrals, and then hope that the primary care physician will refer patients in need of those services to the agency. Another alternative is for the family planning agency to negotiate a special category with the HMO—as an "open referral provider." Such a category would allow the patient to obtain services while retaining confidentiality of care and without having to seek prior authorization.

The issue of confidentiality of care is an especially important one in the area of services for teenagers, and is pertinent to both Medicaid reimbursement and membership in an HMO. It might therefore be appropriate for a family planning agency seeking an affiliation with an HMO to offer a package of care for teenagers and other young women that is built upon the very concept of confidentiality. It could be stressed that if the subcontract permits women to go directly to a family planning agency for services—without first having to go through the primary care case manager—savings can be achieved for the HMO, and the client is likely to be more satisfied than if she has had to make two medical visits.

Recommendations

To initiate or establish relationships with HMOs or other health care delivery systems, family planning agencies should consider some of the following activities. They should undertake surveys to find out which are the organized health care systems in their communities, whom these systems serve, where they are located and who are their providers. It would also be helpful for private-sector family planning agencies to recruit new board members who have some affiliation with or experience in the HMO field. Administrators should institute training sessions to bring employees, volunteers and board members up to date with respect to the new developments in health care financing and the need for new initiatives on the part of the agency they serve.

Since new contractual relationships with organized health care delivery systems will almost certainly add to the family planning agency's workload, the agency's management information and billing systems should be reviewed to determine whether they are adequate to allow for expansion.

Other strategies for agencies to adopt include surveying their own clients to find out what forms of health insurance they have, performing cost-benefit analyses to demonstrate to HMOs, for example, the savings that can be effected through the prevention of unintended pregnancies, investigating the possibility of being designated as a primary care case manager for a special group of clients, and sharing the health education resources that exist within most family planning agencies (such as reproductive health education materials, continuing education courses and staff development in the area of family planning) with the alternative health care delivery system.

By reaching out to the commercial health care sector and to state Medicaid programs, agency administrators can create new partnerships for the family planning field. To achieve that goal, they will have to undertake broad information campaigns in their communities, publicizing the merits of their clinic programs. Sadly, many health care administrators outside the family planning field are unaware of the scope of services provided in family planning clinics and of the clinics' long-term experience, particularly in serving women and teenagers. Collaboration between organized health care delivery systems and existing family planning clinic programs may well lead to increased availability of services for Medicaid-eligible women, the near poor, the working poor without private health care coverage, teenagers deterred from approaching the private medical establishment for care—indeed, all women in search of high-quality, confidential reproductive health services.

Family planning agencies in the private sector are only just beginning to appreciate the radical changes that must be made in their administrative orientation if they are to survive intact. While many administrators may grieve the loss of the earlier altruism that brought them into the family planning movement in the first place, a more businesslike approach to the running of clinics in no way implies that sensitivity to the needs of users should no longer be paramount in the minds of program planners.

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The Other Side of Black Female-Headed Families: The Status of Adult Black Men

By Tom Joe

Both in 1960 and in 1984, the median income of black families was approximately 56 percent that of white families.[1] From this fact, one could come to the quick conclusion that black Americans have made little or no economic progress in the past two decades. However, such gross numbers mask a complex phenomenon—the changing structure of black families and their changing economic prospects. The number of black families headed by women has increased, and the shift has hindered the overall economic progress of black Americans.

This is all fairly well known, but the numbers remain worth studying. Since 1960, the number of black families headed by women has more than tripled, from 889,000 to 2,964,000 in 1984, and the proportion of all black families that are headed by women has more than doubled, from 21 percent to 44 percent.[2] Fifty-nine percent of all black families with children are headed by women; the comparable figure for whites is 20 percent.[3] The number of black children living in female-headed families climbed from 1.8 million in 1960 to 4.9 million in 1984, and the number who were part of such families and were poor rose from 1.5 to 3.2 million.[4] Overall, the median income among black female-headed families is 32 percent of the national median income, and 58 percent of black female-headed families with children are poor.[5]

The changing economic status of black Americans may be seen as a dual phenomenon. The poverty rate among black families consisting of a married couple (with or without children) dropped from more than 50 percent in 1959 to 14 percent in 1984, but the poverty rate among black female-headed families fell only from 70 to 52 percent during that period.[6] Similarly, since 1968, the median income for black families headed by a married couple has risen 17 percent (in constant dollars), whereas the median income for black female-headed families has fallen by eight percent.[7] This polarization can be seen most clearly in the changing structure of the population living in poverty. In 1959, fewer than than 30 percent of all blacks in poverty lived in female-headed families; today, 68 percent of all poor blacks live in such families.[8] If the composition of the black family had remained unchanged since 1959, the black median family income in 1984 would have been about 75 percent that of white

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families, instead of the current 56 percent.[9]

The real victims of the erosion of the black family are children. Today, of the 4.9 million black children growing up without a father, 65 percent live in poverty.[10] (This proportion compares with 45 percent of white children in female-headed families and with 21 percent and 11 percent, respectively, of black children and white children living with both parents.) With these high levels of poverty often come poor nutrition, poor health, low academic achievement and high unemployment.

Most commentators stop at family structure as the major explanation for the disparity between black income and white income. In doing so, however, they neglect another, equally perplexing question: Why has there been such a boom in black female-headed families? In response to that question, this article hypothesizes that the increase in black female-headed families is linked to equally noteworthy and startling trends in the economic and social status of black men. The plight of black men is the other, virtually unnoticed, side of the troubling increase in single-parent black families. Simply put, the economic status of black men is deteriorating.

It is axiomatic that unemployment among black men and women is twice the national rate. Moreover, in hard times, employed blacks are laid off earlier and are rehired later. In 1984, when national unemployment stood at 7.5 percent, unemployment among blacks was at 16 percent. A total of one million black men could not find work in that year. Thus, of the 9.3 million black men of working age (between 16 and 64 years), 11 percent were unemployed.[11]

Unemployment is only part of the story, however. Such rates reflect only the employment status of persons "in the labor force" (that is, those who are actively looking for work). Millions of other men and women are, for a variety of reasons, not looking for work. Some are full-time students, some are physically disabled, a few are needed in the home and some are simply discouraged workers who have stopped looking for jobs after repeated failures. Nineteen percent of all working-age black men—nearly 1.8 million persons—are estimated to have been out of the labor force in 1984.* Unfortunately, data for periods prior to 1980 are not directly comparable with the preceding information, in that the data for earlier years are for all men over 16 years of age rather than for 16–64-year-olds. However, a comparison of labor-force statistics for all men 16 and older demonstrates that dropping out is a recent phenomenon: Since 1960, the number of all black men over age 16 who are not in the labor force has almost tripled, from about 0.9 million to 2.5 million.[12]

The combination of unemployment data and labor-force data reflects the economic status of black men more accurately than does either measure alone. Between 1960 and 1984, the number of black men 16 and older who were either unemployed or out of the labor force jumped from 1.3 million to 3.5 million.[13] In 1960, nearly three-quarters of all black men included in census data were working; today, only 57 percent are working.[14] On closer examination, the picture gets even worse, since there are believed to be 986,000 working-age black men whose labor-force status cannot be determined because they were missed in the 1980 census.† The census appears to have undercounted more than 10 percent of working-age black men, compared with an undercount of two percent of comparable white men.

The cumulative impact of these data is startling. For each black man who is counted as unemployed, another two are out of the labor force. Overall, 43 percent of all working-age black men (almost four million blacks) may be without jobs: Eleven percent are unemployed, 19 percent are out of the labor force, two percent are in correctional facilities and 11 percent are unaccounted for. The data are even more disturbing when juxtaposed with the corresponding figures for white men. Whereas 79 percent of all white men of working age are employed, only 57 percent of comparable black men have jobs.

These data, we believe, suggest that the rise of black female-headed families is rooted in the economic alienation of black men. If 43 percent of all black men are jobless, it is little wonder that a growing number of black women are raising families alone. Between 1977 and 1986, the number of black families headed by women rose by one million and the ranks of black men out of the labor force increased by about 500,000.[15]

The data also suggest that researchers may be treating the symptoms of poverty rather than the ailment. Current research emphasizes unwed mothers and income programs for female-headed families. At the very least, one can neither fully understand nor slow the growth of female-headed families without first assessing the deteriorating status of black men.

It is reasonable to hypothesize that the erosion of the black family is not a mystical cultural trend but a palpable economic event. The boom in black female-headed families is not simply the result of the "welfare curse," of pervasive and invidious discrimination or of changing sexual mores. Instead, the problem springs from an intricate economic and social dynamic. The anomie of black men is the product of subtle social and economic cues that we have barely begun to decipher.

These few data on the status of black men are far from sufficient to explain the economic differentials between blacks and whites. Indeed, they provoke many more questions. The dimensions of the economic and social isolation of black men demand a diagnostic study of their status. Where are these men? Are they homeless? Part of an underground economy? How and why have they dropped out of society? How does their status affect black women and children?

The persistent alienation of black men constitutes a formidable challenge to both researchers and policy-makers, a challenge that is only now beginning to be recognized. How to study, understand and eventually respond to this phenomenon are fresh and troubling issues. But they are, as well, critical issues, because the human costs of the continued erosion of the black family are likely to be socially, politically and morally unacceptable.

Given the wide income differentials between black single-parent and married-couple families (and the bleak prospects for narrowing that gap), the questionable economic status of black men is at the heart of a fundamental social problem. Past efforts to remedy this problem have been entirely inadequate, and we are now witnessing the consequences of our failures. The loss of black men from the labor force may be the result of institutional discrimination, weak affirmative action policies, ineffective youth employment programs, lack of quality education, changing sexual mores and many other economic and cultural forces. Clearly, the problem pervades the fabric of our society and economy and requires an attack on all fronts. Neither a single commission nor a discrete piece of legislation will suffice as a response. Stemming the continued erosion of the black family should be made a national priority that is addressed through decisive action initiated at the highest levels of government and with the concerted efforts of other public and private institutions.

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*Unpublished Bureau of Labor Statistics data for January–March 1984 show a total of 1,944,000 black men between 16 and 64 years of age who were not in the labor force. Forty-seven percent of these men said that they were in school, 15 percent said that they could not work because they were in ill health, eight percent were retired, two percent were needed at home and 28 percent cited some other reason. (Excluding the retired black men leaves a total of 1,789,000 who were eligible for employment.) However, it should be noted that the first two categories may actually include some discouraged workers. Twenty-six percent of the black men who were in school and 18 percent of those who were in ill health said that they wanted a job but could not find one.

†The Bureau of the Census estimates that it undercounted the black male population 25–29 years of age by almost 13 percent and the population 45–49 years of age by approximately 18 percent. (The undercounts of whites in these age-groups are believed to have been three percent each.) Although the Census Bureau has conducted several special studies to determine some of the characteristics of these "missing" black men, nationwide results are not yet available.

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Research Note

Unintended Pregnancy Among American Women

By Jacqueline Darroch Forrest

The following research note presents new estimates of the proportion of American women of reproductive age who experience unintended pregnancies, unintended births and abortions. The data are based on tabulations from the 1982 National Survey of Family Growth (NSFG) and The Alan Guttmacher Institute's 1981–1982 national survey of abortion providers.

In 1982, some 6.1 million women became pregnant. Of these, 3.7 million gave birth,[1] 1.6 million had abortions[2] and 0.9 million experienced miscarriages.* An estimated 37 percent of all births in the five years preceding the 1982 NSFG were unintended—that is, the women either had wanted those births at a later time (27 percent) or had not wanted them ever (10 percent).[3] Applying that proportion to 1982 births results in an estimate of 1.3 million unintended births. In addition, it can be assumed that all 1.6 million abortions were terminations of unintended pregnancies. Adding these two numbers to an estimate of 0.4 million unintended pregnancies that were miscarried yields a total of 3.3 million pregnancies in 1982 (54 percent of all pregnancies in that year) that were not intended. These figures mean that 11 percent of the 54.7 million women aged 15–44[4] became pregnant, six percent unintentionally.

Table 1. Reported and adjusted percentage of U.S. women aged 15–44 who had ever had an unintended pregnancy that ended as a birth or an abortion, 1982 NSFG

Category	Reported	Adjusted*
(1) Total unintended birth	**32.7**	**32.7**
(2) Unintended birth only	29.0	24.8
(3) Unintended birth and abortion	3.7	7.9
(4) Abortion only	**6.2**	**13.2**
(5) Total abortion (rows 3 + 4)	9.9	21.1
(6) Unintended pregnancy (rows 1 + 4)	**38.9**	**45.9**

*Adjusted for underreporting of abortions, based on the assumption that the proportion of women reporting abortions was 47 percent of those who actually obtained them.

The proportion of women who experience an unintended pregnancy during their lives is, of course, greater than the annual proportion who do so. Respondents in the 1982 NSFG reported that 40 percent of the births they had ever had were unintended.[5] However, the proportion of women ever experiencing an unintended birth was actually somewhat lower, since 37 percent of the respondents reported more than one unintended birth.[6] As Table 1 shows, 33 percent of NSFG respondents said that they had had at least one unintended birth during their lives; this group includes respondents (constituting four percent of all women aged 15–44) who said that they had had both an unintended birth and an abortion. Another six percent of NSFG participants said they had never had an unintended birth but had had an abortion, bringing to 10 percent the total proportion who reported having undergone an abortion.

Abortions were, however, seriously underreported in the NSFG, as they have been in most other surveys.[7] Only 47 percent of the abortions that occurred during the period 1977–1981 were reported.[8] Assuming that this degree of underreporting applies equally to NSFG respondents who had experienced both an unintended birth and an abortion and to those who had had only an abortion, then the former group actually constituted eight percent of all women aged 15–44 (rather than the four percent reported), and the latter group constituted 13 percent (rather than six percent). Thus, the real proportion of women of reproductive age who have ever had an abortion appears to be 21 percent, and not the 10 percent indicated by the NSFG. (This revised figure is similar to an earlier estimate that 18 percent of women aged 18–44 in 1981 had obtained abortions since 1967.[9]) Since there is no reason to believe that NSFG respondents underreported

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*Estimated as 20 percent of births plus 10 percent of abortions.

Table 2. Percentage of women estimated to have ever had an unintended pregnancy or an abortion, by age-group, 1982

Age	Pregnancy	Abortion
Total	**45.9**	**21.1**
15–19	18.7	13.7
20–24	41.5	27.0
25–29	46.1	19.5
30–34	53.6	18.4
35–39	54.2	14.1
40–44	65.0	23.1

Sources: Estimated from the 1982 NSFG with adjustments for the overall underreporting of abortions in 1977–1981 and for age differences in abortion underreporting in 1981 (see: W. Pratt, "Abortion Reporting in the 1982 NSFG," memorandum, National Center for Health Statistics [NCHS], Hyattsville, Md., 1985).

Table 3. Rate of abortions and of first abortions per 1,000 women, and cumulative rate of first abortions per 1,000 women, by age-group, 1982

Age	Abortion rate	1st abortions as % of all abortions	1st-abortion rate	Cum. 1st-abortion rate*
<15	8.3	93.9	7.8	7.8
15–17	30.1	86.5	26.0	85.8
18–19	60.0	75.6	45.4	176.6
20–24	51.2	59.2	30.3	328.1
25–29	31.5	49.7	15.7	406.6
30–34	17.7	40.0	7.1	442.1
35–39	9.3	30.0	2.8	456.1
40–44	3.3	20.0	0.7	459.6

*Number having an abortion by end of specific age-period, per 1,000 women.

Sources: **Abortion rate:** S. K. Henshaw, "Characteristics of U.S. Women Having Abortions, 1982–1983," *Family Planning Perspectives*, **19**:5, 1987; **percentage of abortions that were first abortions: <15–29:** average of levels for 1981 and 1983 from NCHS, "Induced Terminations of Pregnancy: Reporting States, 1981," and ". . . 1982 and 1983," *Monthly Vital Statistics Report*, Vol. 34, No. 4, Supplement (2), 1985, and Vol. 35, No. 3, Supplement, 1986; **30–44:** estimates used are lower than those reported by the NCHS, because these age-groups did not have access to legal abortion in the early part of their reproductive lives, whereas younger women have had such access. We have assumed, therefore, that when women who are now beginning their reproductive lives reach ages 30–44, any abortions they then obtain will be less likely to be first abortions than is the case among women currently 30–44.

the unintended births they had had, the proportion of women who have had only an unintended birth appears to be 25 percent rather than 29 percent (the other four percent being those women who reported an unintended birth but failed to report an abortion). In all, these adjusted estimates indicate that 46 percent of U.S. women aged 15–44, rather than 39 percent, have experienced at least one unintended pregnancy in their lives.*

The figures presented so far are based on an average of the differing exposure of older and younger women to the risk of unintended pregnancy, as well as the differing availability of legal abortion during their lifetimes. In 1982, women aged 15–24 were the only ones who had had access to legal abortion throughout their reproductive years. As Table 2 illustrates, 65 percent of all women aged 40–44 in 1982 had had at least one unintended pregnancy, and more than one-third of them (23 percent of all women aged 40–44) had had at least one abortion.

However, it is probably inappropriate to view these levels as representative of the proportions of today's young women who will ever experience an unintended pregnancy or abortion. In the first place, when the older women began their reproductive lives, during the mid-1950s, the more effective methods of contraception were not available. The use of these methods by today's young women presumably will reduce the cumulative incidence of unintended pregnancy. Second, our estimate of the proportion of older women who have had an abortion will be low if such women are less likely to report procedures performed many years ago—when they were illegal—than procedures performed more recently. But even if the estimate is low, women turning 15 during the 1980s will probably be more likely to ever obtain an abortion than were those who turned 15 during the 1950s. Indeed, as Table 2 shows, an estimated 27 percent of 20–24-year-olds in 1982 had already had an abortion, compared with 23 percent of women aged 40–44 in that year.

It is difficult to estimate the extent to which the level of unintended pregnancy will change, partly because it is unclear to what extent current abortions represent additional unintended pregnancies rather than pregnancies that in earlier years would have been carried to term.[10] However, we can estimate the proportion of women who will have had an abortion by age 45 if current rates of abortion continue. To compute this estimate—the cumulative rate of first abortions—we have adjusted the 1982 abortion rate for each age-group by the proportion of abortions that were first procedures, and then multiplied the adjusted rate by the number of years in each age-group (see Table 3). The results indicate that 18 percent of women will have had a first abortion by age 20, 41 percent will have had one by age 30, and 46 percent, by age 45.

We do not know whether current abortion rates will continue, but if they do, then nearly half of U.S. women can be expected to undergo an abortion at least once during their lives. Furthermore, if the lifetime rate of unintended pregnancy remains at the 65 percent level estimated for women aged 40–44 in 1982, then current abortion rates imply that about 70 percent of women who experience an unintended pregnancy will have at least one abortion.

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*These figures do not include any estimate for unintended pregnancies ending only in miscarriage.

DIGEST

Child Care in America Inadequate in Helping Working Women with Babies or Young Children

American woman are having a hard time juggling jobs and babies. And large numbers of U.S. children do not find an adult present when they get home from school. Seven percent of all children aged 5–13 (about two million in all) have no adult supervision when they get home from school. Moreover, because child care is so inadequate—and so costly when available—many women with young children, especially poor women, who are most in need of jobs, are probably prevented from working. These are the major conclusions of two recent reports. The first report—on patterns of after-school care for young children—is a special study based on the Current Population Survey (CPS) of the U.S. Bureau of the Census.[1] The second uses current demographic and labor-force data to describe the problems facing many working women who have young children.[2]

After-School Care of Children

There are almost 29 million U.S. children between the ages of five and 13 who are enrolled in school. Of these, 76 percent live with two parents, and 21 percent (15 percent of white children and 51 percent of black children) live in a household maintained only by the mother. In all households where the mother is employed full time, 14 percent of children go home after school to a house with no adult present, 32 percent are taken care of by an adult who is not the parent, and 54 percent are cared for by a parent.

The likelihood that a young child will not be supervised by an adult after school is greater for whites than for blacks. In households where the mother works full time, 15 percent of white children but only seven percent of black children receive no adult supervision when they get home from school. In households where, as well as working full time, the mother is the sole source of support, 18 percent of white children and eight percent of black children are not taken care of by an adult after school.

After-school child care arrangements differ with the child's age, as might be expected. The proportion without adult supervision after school ranges from one percent among children five years old to 14 percent of those aged 13. And if the mother is employed full time, 19 percent of 11–12-year-olds and 25 percent of 13-year-olds go home after school to an unsupervised setting. Again, the rates by age are higher among white children than among black children.

In households where the mother works full time, patterns of after-school care for children also differ with the mother's education, occupation and income. In general, the higher her level in each of these categories, the more likely is her child not to be supervised by an adult after school, although these differences are not as great as those by race and the child's age.

The authors of the report discuss the "counterintuitive" finding that a large proportion of children whose mothers work full time are in fact still cared for by a parent when they come home from school. The investigators point out that this apparent paradox can be partly explained by two factors. Among one-third of all couples who have young children and in which both parents work full time, one of the partners is employed in shift work, and some working mothers are able to care for their children at home while they work.

The CPS data reveal that patterns of after-school child care were very different in 1984 than they had been 10 and 20 years earlier. Among children aged 6–13, for example, the proportion whose mothers were employed full time climbed from 18 percent in 1965 and 27 percent in 1974 to 37 percent by 1984. Among children with mothers working full time, a larger proportion in 1984 than in 1974 were cared for after school by one or the other of their parents. In addition, a great deal more care was provided by other relatives and by nonrelatives in the later year, and fewer children were without adult supervision.

Working Mothers

The second report, authored by demographer Martin O'Connell and economist David E. Bloom, points to a number of reasons why more women are in the labor force now than have been for the past three decades. The reasons include American women's labor-force participation during World War II, an experience they were later reluctant to relinquish; the advent of the birth control pill, which enabled women to control with reliability whether and when to have children; and the fact that among the baby boom cohort, relatively low wages and relatively high rates of unemployment, combined with rapid inflation in the recent past, have made it increasingly necessary for couples to have two incomes if they are to attain a desirable standard of living.

Labor-force participation increased from about 34 percent of women aged 25–34 (the prime childbearing ages) in 1950 to about 71 percent by 1985. O'Connell and Bloom comment that this "growing number of women working raises a number of very difficult issues for them and their families. Indeed, most working women face a tremendous personal struggle in trying to balance their personal and professional lives." The authors say this struggle is greatest for working mothers. Only nine percent of working mothers with preschool children are able to care for their children while at work, and these women are mostly self-employed. The remainder have to rely on day care centers or relatives and on others who take care of the child outside or within the home. Patterns of care for preschoolers vary with the mother's education and the child's age. College-educated women are more likely than less-educated women to transport their children to day care centers or to babysitters' homes. Older preschoolers are more likely than are babies to be in group care centers or in nursery schools.

The costs of weekly child care for children under five years old are high. A recent survey found that the costs ranged from a low of

$35–$70 for family day care outside the home in Dallas to a high of $260–$340 a week for care provided in the home in Boston. However, the authors claim, "for most families, in-home care is provided by grandmothers or other relatives, at little or no monetary cost to the mother." O'Connell and Bloom point out that in 1985, there were 1.4 million working women with newborn babies. Seventy-six percent of these women were working in clerical or sales positions, in service trades or in blue-collar occupations—all of which paid less than professional and managerial positions. Women who have lower paying positions, the authors argue, are least likely to be able to afford expensive child care arrangements.

The authors of the PRB report conclude that as a result of the pressures on them to work, "many women find it extremely difficult to decide whether they are mothers who happen to work or workers who happen to be mothers." They say that women's "simultaneous involvement in career and mothering entangles [them] in exhausting lifestyles," and point out that the "amount of pure leisure time available to women has declined by about 20 minutes per day over the past quarter century."

The increased participation of women in the work force has occurred, according to O'Connell and Bloom, with few concomitant adaptations in the workplace, within the family, in government policies or in programs for working mothers. The authors conclude that the problem of child care in the United States requires a number of solutions. These should include more flexible work schedules, for both men and women, more employer-sponsored child care as a fringe benefit, and public tax policies that permit working parents to take tax credits for child care costs. The authors recommend that U.S. policy-makers study the example of Sweden, which has partially solved its earlier labor shortage by establishing an extensive network of government-supported day care centers, and by legislating a variety of financial incentives and legal guarantees designed to make it easier for women to start their families and to continue working. Under the Swedish system, the authors say, maternity (or paternity) leave at 90 percent of full pay is guaranteed for up to nine months after the birth of a baby, the parent who stays home with the baby is assured a job upon returning to work, and a parent may work six hours a day and receive full-time pay until the child's eighth birthday.

In 1982, the U.S. Bureau of the Census surveyed nonworking women with young children to ask them whether they would look for work if child care services were available at a reasonable cost. The responses to this question lead the authors to believe that if child care were more accessible, there would be substantial increases in the labor-force participation of women who now stay home to care for young children. The increases would be particularly great among single women, black women, women with family incomes under $15,000 a year and those who dropped out of high school, the researchers predict.

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Poll Says Most People Accept Family Planning, Approve of Condom Ads

Most American adults have no religious or moral objections to family planning, and six out of 10 approve of advertising contraceptives on television. More than seven out of 10 favor television advertising of condoms to prevent the spread of AIDS. These are some of the results of a recent Harris Poll.[1] The survey, which was conducted by Louis Harris and Associates for the Planned Parenthood Federation of America, was based on telephone interviews with a cross-section of 1,250 Americans aged 18 and older. The interviews were conducted between Jan. 28 and Feb. 1, 1987.

Findings

Sixty percent of Americans believe that contraceptives should be advertised on television. A majority of all population subgroups, except those aged 65 and older, favor such advertising, including 62 percent of Catholics. Men support contraceptive ads more than do women (68 percent vs. 53 percent). Approval rises with education and income but declines with age.

An even larger proportion of Americans—74 percent—favor TV advertising of condoms to prevent the spread of AIDS. In no population subgroup does approval of condom ads for this purpose go below 59 percent (the rate found among people 65 and older). A poll conducted at about the same time by NBC and *The Wall Street Journal* among 800 U.S. adults found a 79 percent approval rate for such advertising.[2]

Americans are slightly more in favor of TV ads for contraceptives than for other products that are already widely advertised on the networks—feminine hygiene sprays (58 percent) and beer and wine (53 percent). Moreover, support for contraceptive ads far surpasses support for other products that are not advertised on the networks—cigarettes (34 percent), erotic lingerie (27 percent) and X-rated movies (12 percent).

Seventy-two percent of Americans—including 73 percent of Catholics and 60 percent of Evangelicals—say that contraceptive advertising would not offend people like themselves; just 26 percent say they would find such ads offensive. Sixty-six percent of Americans think "contraception is not too controversial to be mentioned on television." Seventy-nine percent (including 78 percent of Catholics and 73 percent of Evangelicals) say that "there are many things on television . . . more offensive than references to contraception", and 59 percent agree that it would "not be offensive to indicate on television that characters in TV programs use birth control." Indeed, 76 percent—including 77 percent of Catholics and 76 percent of Evangelicals—think that "if young people saw that TV stars they admire use birth control," they would be more likely to use it themselves.

Fifty-two percent do not think that TV advertising of contraceptives "would encourage teenagers to have sex," compared with 42 percent who think that it would. However, 82 percent—including 87 percent of Catholics and 74 percent of Evangelicals—believe that such ads would encourage more teenagers to use contraceptives. More than six in 10 respondents believe that television "gives the impression that sex is all fun and no risk," and "tends to encourage teens [to be] sexually active" (63 percent and 64 percent, respectively). Nevertheless, a majority (54 percent) believe that most TV programs keep sex "within reasonable limits."

It is notable that 87 percent of respondents—including 80 percent of Catholics and 85 percent of Evangelicals—say that they have "no religious or moral objection to birth control or family planning." Only 11 percent of respondents say that they do have any objection.

Other Polls

Another Harris survey was conducted July 29–Aug. 7, 1986, for Group W—Westinghouse Broadcasting Company among 1,254 respondents aged 18 and older.[3] Seventy percent of the respondents to this poll say that they approve of the government's role in providing birth control services for teenagers, 29 percent disapprove. Forty-four percent strongly approve of such services, and 12 percent strongly disapprove. Eighty-five percent state that they would be interested in seeing TV programs on teenage pregnancy, 47 percent say they would be very interested. However, of the 54 percent who think TV is doing a poor job of providing information for the public on children's issues, only four percent believe that programs on sex or teenage pregnancy are among the one or two things that would most improve the situation.

A third survey, on AIDS and birth control, was undertaken by the Gallup organization in February of this year for *Newsweek* magazine.[4] Fifty-one percent of Americans aged 13 and older believe that sex education and birth control are the best ways of limiting AIDS and of preventing unwanted pregnancies among teenagers. This proportion rises to 65 percent among teenagers and 64 percent among all unmarried respondents under age 30.

A plurality of all respondents (47 percent)—but a majority of teenagers and of unmarried respondents under age 30 (54 percent and 55 percent, respectively)—believe that dispensing contraceptives in the schools will *not* make teenagers more likely to engage in sexual activity.

Fifty-two percent of respondents to the *Newsweek* survey think teenagers should be able to get "birth control devices" from doctors, even without parental consent; 56 percent think teenagers should be able to obtain such devices in school, but 30 percent would want adolescents who get contraceptives in school clinics to have parental consent. Fifty-four percent think that young people should be permitted to get birth control devices starting at ages 16–18. An additional 34 percent believe that young people should be able to obtain contraceptives before reaching age 16.

Seventy-six percent of all respondents (including 79 percent of parents of teenagers) believe that if parents cannot prevent their children from having sexual relations, they should help them get birth control. Respondents consider the pill to be the most appropriate method of contraception for adolescents: Forty-one percent of the total group choose the pill, compared with 34 percent who pick the condom; among teenagers, those proportions are 65 percent and 27 percent, respectively.

Finally, 56 percent of all respondents, but a slightly smaller proportion of teenagers (51 percent), believe that fear of AIDS has affected the social and dating habits of adolescents, at least to some extent.

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Higher Neonatal Mortality Among Blacks Is Not Attributable to Their Higher Rate of Teenage Births

The prevention of teenage childbearing will do little to bridge the existing gap between blacks and whites in rates of neonatal mortality,* according to a recent study from the Harvard School of Public Health.[1] Although blacks have a higher incidence of teenage childbearing than do whites, the data show that this factor accounts for very little of the large racial difference in deaths among newborns. The study also finds that the maternal ages at which the lowest neonatal mortality rates occur are younger for black infants (17–23) than they are for white infants (24–29). However, the lowest rate among black babies is more than twice the lowest rate among whites.

The study, which draws on data from birth and infant death certificates for all first births that occurred between 1976 and 1979 in Louisiana, Tennessee and Washington, encompasses 305,907 births and 2,850 neonatal deaths.

Neonatal Mortality Rates

There are fewer differences by maternal age in black than in white neonatal mortality rates, the data show. The infants of black women aged 17–19 died at only slightly higher rates than did the infants of black women aged 20–23. Among the latter babies, who had the lowest neonatal mortality rate, there were 12.7 deaths per 1,000 live births, compared with 13.3 per 1,000 among the infants of 19-year-olds and 14.3 among those born to 17- and 18-year-olds. The rate for infants of black 16-year-olds was only slightly higher than that for babies of black women 24–26 years old—16.8 and 16.5, respectively. Among infants born to older black women, neonatal mortality rates were 15.0 for maternal ages 27–29, 15.3 for ages 30–34, and 14.3 for ages 35 and above. There were no statistically significant differences in the neonatal mortality rates for first births to black women aged 16 and older. Only among the infants of black women 15 and younger did neonatal mortality rates begin to rise substantially above the levels found for other infants (about 10 percent of births among black women in the sample occurred at maternal ages 15 and younger).

Among whites, the lowest neonatal mortality rates occurred at older ages than they did among blacks. The babies of white women aged 24–26 and 27–29 were the least likely to die (6.1 and 6.8 deaths per 1,000 live births, respectively). Infants born to white women aged 20–23 and 35 and older had the next lowest rates (7.3 and 7.2). Except for the infants of 19-year-olds—who died less frequently than did those of women aged 30–34 (7.4 and 8.1 per 1,000, respectively)—babies born to white teenagers had higher mortality rates (8.7–23.3) than did babies born to women in all other age-groups. (Approximately 22 percent of the white births occurred among women 18 and younger.) Nonetheless, neonatal mortality rates among infants of white women aged 15–18 were lower at each year of age than the lowest reported black rate (12.7 among infants of black women aged 20–23). Overall, the difference between the neonatal mortality rates for blacks and for whites was 7.1 deaths per 1,000 live births, and the study found that this difference would narrow by only 0.3 deaths per 1,000 if all women giving birth at ages 19 and younger were excluded from the analysis.

Neonatal mortality rates also varied by residence and by the level of prenatal care the women had received. Infants of women living in rural areas had higher rates at each single year of maternal age than did infants of women residing in metropolitan areas, and infants born to women who had received inadequate prenatal care had higher rates at each year of maternal age than did those born to women receiving better care. Because teenagers are more likely than older women to receive inadequate prenatal care and to live in rural areas, age-specific neonatal mortality rates are biased somewhat by these two factors. Controlling for them, especially for prenatal care, reduces the association between age and neonatal mortality.

The contribution of inadequate prenatal

(*Continued on page 83*)

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*Deaths occurring within the first month of life.

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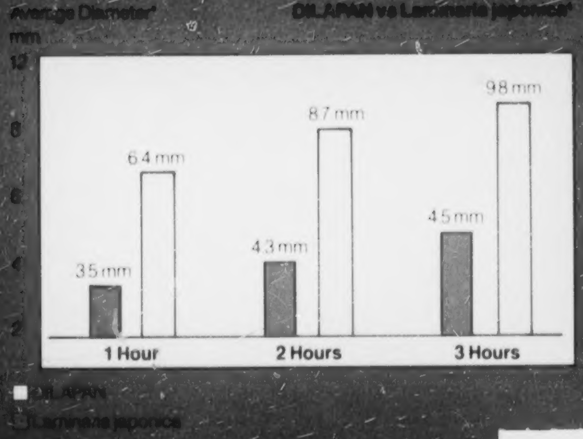

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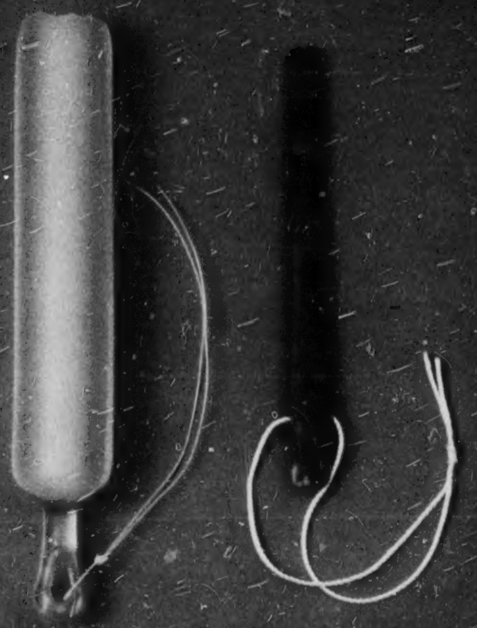

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References
1. Chvapil M, Droegemueller W, Mayer T, et al: New Synthetic laminaria. Obstet & Gynecol 60: 729–733, 1982
2. Data on file, Gynotech incorporated, Lebanon, NJ.

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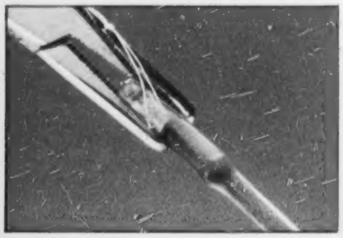
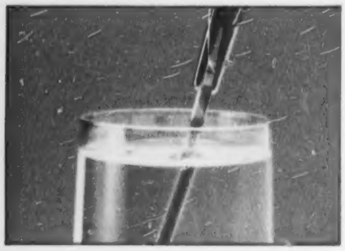


A firm handle is provided for easier insertion and withdrawal. **Do not grasp the device beyond the knob/collar. Insert device up to knob/collar only.**



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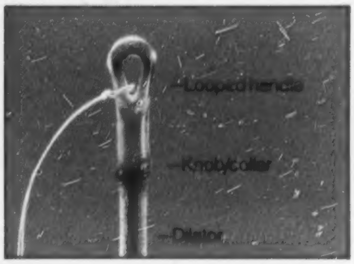
Open package using sterile technique. With forceps, firmly grasp looped handle and remove device from package.



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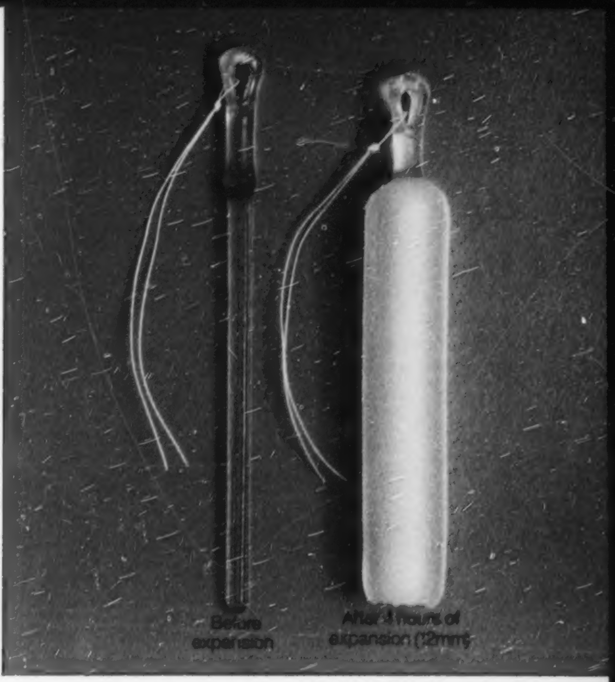

DILAPAN™ Hygroscopic Cervical Dilator

Please note: DILAPAN™ is different from other Osmotic Cervical Dilators with which you may have had experience. It should be used only by practitioners experienced in D&E procedures.

Read instructions prior to use of this device.

Description: DILAPAN™ hygroscopic cervical dilator is manufactured from HYPAN poly-acrylate-based hydrogel. The dilators are firm hygroscopic rods similar in shape to natural (laminaria) dilators. They are capable of increasing in diameter from three (3) or four (4) to an average of ten (10) millimeters within four (4) hours as they absorb moisture from the genital tract.

In clinical trials, DILAPAN™ has been shown to dilate the cervix gradually. It is unnecessary to use either general or local anesthetics during the insertion process, thereby eliminating their associated risks to the patient.

A monofilament marker tag is provided to indicate location.

Principle of Action: HYPAN hydrogel absorbs moisture through hygroscopic action and gradually swells in diameter thus dilating the cervical canal.

Indications for Use: DILAPAN™ hygroscopic cervical dilator is indicated for dilation of the cervix uteri prior to the termination of pregnancy up to 16 weeks.

Contraindications: DILAPAN™ hygroscopic cervical dilator is contraindicated in the presence of clinically apparent genital tract infection.

Warnings: DILAPAN™ hygroscopic cervical dilator should not be used in women who are menstruating or who are beyond 16 weeks gestation.

Precautions: 1) Clinical trials have not demonstrated any allergic reactions to the device, however, an allergic reaction could result from a hypersensitivity to the components. 2) Careful placement of the device is essential to avoid traumatic injury to the uterus or cervix and to avoid migration of the device either upward into the uterus or downward into the vagina. Refer to instructions for use: insertion/removal diagram (see diagram 1). 3) Clinical trials have not demonstrated any infections related to the DILAPAN™. However, in the presence of known pathogens, contamination of the device during insertion is possible. 4) The device should not be allowed to remain in place for more than four (4) hours. 5) As with all invasive procedures, patients must be kept under physician supervision. 6) Manipulation of the cervix has infrequently been associated with a vaso-vagal reaction. Patients must be carefully observed for evidence of syncope. 7) Entrapment of the DILAPAN™ in the cervical canal has been observed. Refer to instructions for use: possible problems with DILAPAN™ item 3. 8) Ultrasound may be used to locate the device. 9) Pulling on the marker string or twisting the device during removal may cause the device to break. 10) In the event of breakage, every attempt should be made to remove all fragments. Refer to Instructions for Use: Possible Problems with DILAPAN™ item 4. The clinical effects of fragments remaining in the genital tract are unknown.

How Supplied: 100 devices per box or 25 devices per box; available device dimensions: 4mm x 55mm, 4mm x 65mm, 3mm x 55mm; each device individually packaged in moisture resistant material and sterilized with ethylene oxide gas.

CAUTION: Federal law restricts this device to sale only on the order of a physician.

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(*Continued from page 80*)

care to neonatal mortality is not as great as the influence of race, however. The neonatal mortality rate for infants of white 15-year-olds was 9.1 per 1,000 live births among babies born to women who lived in metropolitan areas and whose prenatal care was not clearly inadequate, compared with 17.2 among infants of rural women who received inadequate care. The comparable rates among infants of black 15-year-olds were 15.3 and 29.0 deaths per 1,000. Among infants of women aged 24–26, whites had neonatal mortality rates of 6.1 per 1,000 under the more favorable conditions and 11.6 per 1,000 under the less favorable circumstances. The comparable rates among babies born to black women in this same age-group were 10.3 and 19.5. These figures show, the investigator says, that infants of black women giving birth under the more favorable conditions had almost as high a neonatal mortality rate as those of white women giving birth under the less favorable conditions.

Controlling for gestational age or birth weight eliminates the differential effect that maternal age and residence have on neonatal mortality, and substantially reduces the association between prenatal care and neonatal mortality. Adjusting for birth weight also eliminates racial differences in the neonatal mortality rate and, in fact, gives black babies slightly lower odds of dying than white babies have. The study also finds that there is an association between black racial identification and low birth weight that is independent of the effects of maternal age, prenatal care and mother's residence.

If rates are not adjusted for any of the variables studied (residence, prenatal care, race, birth weight and gestational age), the babies of mothers aged 11–13 run four times as great a risk of dying as the infants of first-time mothers aged 24–26. The babies of mothers aged 14 run 3.3 times the risk, and those of women 15–16, 2.1 times the risk. Among babies of women aged 17, 18 and 19 giving birth for the first time, the risk is 1.6, 1.4 and 1.2 times higher, respectively, than that among babies of older women. When the data are adjusted, however, the risks of neonatal mortality among the babies of young women aged 15, 17 and 18 turn out to be the same as those found among the babies of women aged 24–26; the risks among babies whose mothers are 16, 19, 20–23 and 27–29 are only 1.1 times higher. Compared with babies born to women aged 24–26, those whose mothers are 11–14 have the highest risk (1.3), and those whose mothers are 30–34 and 35 and older have the lowest (0.9 and 0.7, respectively). None of these differences is statistically significant.

Conclusions

Examination of neonatal mortality by maternal age alone makes it appear that teenagers giving birth, particularly those 18 and younger, are at a biological disadvantage that results in excessive risk to their infants, concludes the researcher. However, she points out, socioeconomically advantaged teenagers rarely bear children, whereas blacks, rural residents and women who get inadequate prenatal care currently account for most teenage childbearing. This suggests, says the researcher, that the association between teenage births and excessive rates of short gestation, low birth weight and neonatal mortality may result from environmental disadvantages rather than from inherent biological factors, since all of these risks are reduced after race and prenatal care are controlled for. Among mothers younger than 15, for example, inadequate prenatal care accounts for almost one-third of neonatal deaths. The finding that infants of black women aged 24–34 had higher neonatal mortality rates than infants of black women 17–19, and higher rates than infants of even younger white women, also contributes to the hypothesis that maternal age does not generally have an independent effect on neonatal mortality.

The researcher concludes that "if none of the teenage pregnancies in this data set had occurred, the racial disparity in neonatal mortality rates would have dropped only trivially. This finding contradicts the view that higher black neonatal mortality rates compared with white [rates] are attributable to the greater incidence of teenage childbearing among blacks."

Reference

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Fertility Rates Among U.S. Women Aged 15–24 Reach Record Lows, but Increase Among Unwed

U.S. fertility continues to decline. Among all women of reproductive age, the 1984 fertility rate was one percent lower than the 1983 level. Among teenagers, fertility fell to its lowest level since 1940, and among women 20–24, to its lowest level ever. As a result of the declines in fertility among younger women—and slight increases among those aged 30–39—women aged 25–34 now bear a larger proportion of children than do those 15–24, according to 1984 data released by the National Center for Health Statistics.[1] The data also show that the proportion of babies born to unmarried women continues to increase.

Overall Fertility

There were 3.67 million babies born in the United States in 1984, about 30,000 more than were born in 1983. The annual number of births has ranged between 3.6 million and 3.7 million for the past five years; that level is about halfway between the highest annual number of births reported in the last 25 years (4.27 million in 1961) and the lowest (3.14 million, in 1973 and 1975).

Despite the small increase in the number of births during 1984 (because the baby boom generation is now passing through its prime childbearing years), the fertility rate declined slightly between 1983 and 1984. There were 65.4 live births per 1,000 women aged 15–44 in 1984, compared with 65.8 in 1983. The 1984 fertility rate was higher among black women than among white women—81.4 and 62.2 births per 1,000 women, respectively; the rate had dropped by less than one percent from the previous year for each group.

The fertility rate has varied little in the past 10 years, as Table 1 (see page 84) shows, and is far below the rate of 1970 and earlier. The teenage fertility rate, which was 50.9 births per 1,000 women aged 15–19 in 1984, has declined by 25 percent since 1970, and is at its lowest level since 1940. The highest fertility rates occur among women aged 20–24 and 25–29. However, the rate of 107.3 is an all-time low for the 20–24 age-group. The fertility rates among women 20–29 fell dramatically in the early 1970s, but have remained comparatively stable since then. Women in their 30s also experienced dramatic declines in fertility in the early 1970s; however, that trend has reversed itself during the past decade, and among women aged 30–34, the 1984 fertility rate is closer to the 1970 level than to the low that occurred in 1975.

Table 1 also shows the shift that has occurred in the ages at which women are bear-

Table 1. Fertility rates among all women and unmarried women, and percentage distribution of births, by age-group, 1970–1984

Measure	1984	1980	1975	1970
Fertility rate*				
All women				
15–44	**65.4**	**68.4**	**66.0**	**87.9**
15–19	50.9	53.0	55.6	68.3
20–24	107.3	115.1	113.0	167.8
25–29	108.3	112.9	108.2	145.1
30–34	66.5	61.9	52.3	73.3
35–39	22.8	19.8	19.5	31.7
40–44	3.9	3.9	4.6	8.1
Unmarried women				
15–44	**31.0**	**29.4**	**24.5**	**26.4**
15–19	30.2	27.6	23.9	22.4
20–24	43.2	40.9	31.2	38.4
25–29	37.0	34.0	27.5	37.0
30–34	23.2	21.1	17.9	27.1
35–39	10.9	9.7	9.1	13.6
40–44	2.5	2.6	2.6	3.5
Percentage of births†				
15–19	12.8	15.3	18.5	17.3
20–24	31.1	33.9	34.8	38.0
25–29	31.8	30.7	29.8	26.7
30–34	17.9	15.2	11.9	11.5
35–39	5.3	3.9	3.7	4.8
40–44	0.7	0.6	0.8	1.3
15–44	100.0	100.0	100.0	100.0

*Births per 1,000 women.

†Figures may not add to 100 because of rounding and the inclusion in the denominator of a small number of births to women outside the 15–44 age-group.

Sources: See reference 1; and National Center for Health Statistics, "Advance Report of Final Natality Statistics, 1980," *Monthly Vital Statistics Report*, Vol. 31, No. 8, Supplement, 1982; ——, "Advance Report . . ., 1975," *Monthly Vital Statistics Report*, Vol. 25, No. 10, Supplement, 1976; and ——, "Summary Report: Final Natality Statistics, 1970," *Monthly Vital Statistics Report*, Vol. 22, No. 12, Supplement, 1974.

ing children. The proportion of births to women 15–24 has declined almost every year since 1970, whereas the share among women 25–34 has increased consistently. In 1984, only 44 percent of births were to women 15–24, as against 55 percent in 1970. In comparison, women aged 25–34 accounted for 50 percent of all births in 1984, but for only 38 percent in 1970.

Just as the fertility rate declined slightly for women in 1984, so it did for men—from 55.3 babies per 1,000 men aged 15–54 in 1983 to 55.0 per 1,000 in 1984. The declines are particularly evident among men aged 15–29, with slight increases occurring among men aged 30–44 and 50 and older. Black males aged 15–19 are an exception to that rule; their fertility rate has increased slightly for the past three years. The only other groups of black males to show increases are those aged 40–44 and 50–54. The overall male fertility rate is higher among blacks than among whites: 77.6 and 51.2 per 1,000, respectively, in 1984.

Nonmarital Rates

Although all unmarried women except teenagers experienced a decline in fertility between 1970 and 1975, the subsequent trend among all women younger than 40 has been upward, as Table 1 indicates. The 1984 fertility rate of 31.0 births per 1,000 unmarried women aged 15–44 is up from 30.4 in 1983 (not shown). Nonmarital fertility rates are at their highest among women 18–19 and 20–24 (approximately 43 births per 1,000). Unmarried women 15–24 now have higher fertility rates than they did in 1970, while those aged 25–29 have the same rate they did in 1970. Although unmarried women in their 30s have also experienced increases in fertility in the past decade, their fertility rates are still below those of 1970.

Altogether, 21 percent of the babies born in 1984 were born to unmarried women, up from 20 percent the previous year. Although the fertility rate among unmarried teenagers has been on the rise, the number of women in this age-group is falling, now that the baby boom generation has passed beyond its teenage years. As a result of this demographic shift and the rising fertility rates among older unmarried women, births to unmarried women younger than 20 constituted 35 percent of all nonmarital births in 1984, compared with 41 percent in 1980.

The 1984 fertility rates for unmarried black women and for unmarried white women differ substantially (76.8 and 20.1, respectively), and the fertility trends for the two groups are moving in opposite directions. The nonmarital fertility rate among blacks has fallen by 20 percent since 1970, when it stood at 95.5 per 1,000 unmarried women, whereas that among whites has risen by 45 percent, from 13.9. The increase in nonmarital fertility among whites aged 15–19 has been even greater: from 10.9 to 19.0 births per 1,000 women, up 74 percent since 1970. The fertility rate among unmarried black teenagers has dropped by 10 percent, from 96.9 in 1970 to 87.1 in 1984.

Other Trends

The total fertility rate in 1984 remained at 1.8 children per woman, the same as it has been since 1977. The birthrate also remained the same as it was in 1983—15.5 births per 1,000 population. Seventy-five percent of births in 1984 were those of first or second children; just four percent were of fifth or subsequent children. The proportions were 66 percent and 10 percent, respectively, in 1970.

Although there were slight declines between 1983 and 1984 in the proportions of both black and white babies classified as having low birth weights, the difference between the two proportions remains large—six percent of white babies weighed less than 5.5 pounds in 1984, compared with 12 percent of black babies. Thirteen percent of all second or succeeding births in 1984 occurred within 18 months of the previous birth, 14 percent occurred between 18 months and two years later, and 24 percent, between two and three years later. These proportions have been about the same since 1980. The proportion of babies born after short intervals tends to be higher among blacks than among whites—17 percent of black babies and 11 percent of white babies were born fewer than 18 months after a previous birth.

The 1984 natality statistics confirm that deliveries are concentrated on weekdays, probably because of births scheduled through induced labor and cesarean section. Whereas an average of 10,565 births occur each weekday, the number falls to 8,686 on Saturday and Sunday. The proportion of all births occurring in hospitals has been 98 percent or higher since 1966; in 1984, it was 99 percent. Although 96.5 percent of all births were attended by a physician, that proportion is declining slightly. Midwives attended nine percent more in-hospital births in 1984 than they did in 1983, and three percent more out-of-hospital births.

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Childbearing Occupies Short Period of Woman's Life in Developed World

Low levels of fertility in the developed world have contributed to a reduction in the number of years women devote to childbearing. However, there are variations among some developed countries in the duration of the childbearing period and in the timing of the births that mark its beginning and end. These variations and the cohort trends in the childbearing experience of women in six developed countries are the subject of part of a United Nations report on world population trends.[1]

The authors of the report compare the childbearing experience of women of different birth cohorts in Australia, Canada, France, Japan, the Netherlands and the United States by examining median age at marriage, first birth and last birth and the duration of the childbearing period. The data are derived from a variety of sources, including vital statistics reports, censuses and special surveys. Age at last birth for the most recent cohorts, who have not yet completed their childbearing, is estimated.

Table 1. Median age at first marriage, at first birth and at last birth, and the average duration of the childbearing period among the 1930–1939 birth cohort, by country*

Country	Age at marriage	Age at first birth	Age at last birth	Duration of childbearing
Australia	22	24	31	7
France	22	24	30	6
Japan	24	25	29	4
Netherlands	24	25	29	4
U.S.A.	20	21	31	10

*Canadian data for the 1930–1939 birth cohort are not available.

Findings

Women in developed countries that have undergone the transition from high to low fertility have experienced, over different time periods, an increase in life expectancy, an increase in age at first birth, a decline in age at last birth, and a reduction in the duration of the total childbearing period. In the United States, Canada and Australia (where data are available for cohorts born at the end of the nineteenth century), fertility levels have declined at a relatively slow pace, from around four children per family among cohorts born at the end of the last century to about 2.8–3.6 among women born in 1940–1949. Japanese women, in contrast, experienced a dramatic decline in fertility over an even shorter period: Between the 1900–1909 and the 1940–1949 cohorts, average completed family size dropped from over five children to about two.

The median age at marriage of women in Australia, Canada, France, the Netherlands and the United States declined among cohorts born in the earlier part of this century. For example, in Australia, women born in 1910 married at age 25, on average, whereas those born after 1930 married at 22. In Canada, the decline began earlier—among women born between 1890 and 1910. In the Netherlands, women born in 1910 married at age 26, and those born in the late 1930s married at 24. In the United States, the median age at marriage declined by only one year, from 21 among women born in 1880–1890, to 20 among those born in the 1930s. However, age at marriage began to increase slightly among American women born in the 1930s, Canadian women born in the 1940s and Australian women born in the 1950s. In contrast, Japan experienced a steady increase in age at marriage: Women born before 1890 married at age 23, whereas those born after 1950 married at about age 25.

In five of the countries studies (excluding Japan), the decline in median age at marriage among women born in the early part of the century coincided with a decline in median age at first birth. Most of these countries underwent a slight increase in age at first birth as women born in the 1940s started to bear children. Japanese women, however, have experienced a steady increase in age at first birth beginning with the cohorts born at the turn of the century.

All countries with reliable data show pronounced declines over time in a woman's age at the time of her last birth. In the United States, the median age at last birth among women born in the 1880s was 33, whereas those born in the 1950s are expected to have completed childbearing by age 30; in Australia, the age at last birth among women born in the 1880s was 36, and among those born in the 1930s, the average age was 31. In the Netherlands, age at last birth declined from 29 years of age among the 1930–1939 cohort to 27 among those born in the mid-1940s. However, the most striking decline in age at last birth occurred among Japanese women: Those born between 1910 and 1919 were 39, on average, at last birth, whereas women born 20 years later were only 29.

As Table 1 shows, among the five countries with data available for women born in 1930–1939, American women marry earliest, and Japanese and Dutch women do so latest. Median age at last birth does not exceed 31 in any of the developed countries studied and is 29 in Japan and the Netherlands.

Because of the variations between countries in women's age at first and last birth, there are considerable differences in the duration of the overall childbearing period among the 1930–1939 cohort. Japanese women bore an average of 2.3 children within the space of four years. Dutch women bore 2.7 children within four years. Australian and French women had roughly three children within 6–7 years, and American women bore about 3.5 children within 10 years.

There is a strong positive correlation between the decline in family size and the duration of the childbearing period. The clearest example can be found in Japan, where a decline in completed family size from five to two children coincided with a reduction in the childbearing period of 14 years. The authors point out that although completed family size among the most recent birth cohorts in all six countries has fallen to about two children per family, differences between countries in childspacing patterns result in differences in the duration of the childbearing period. Further, they add, changes in the time women devote to childbearing can occur even when average family size does not change: In Australia, for example, completed family size has remained practically constant among women born since the beginning of this century, but women born in the late 1930s devoted more than one year less to childbearing than did those born in 1900.

Because of low mortality levels, increases in life expectancy, and shorter childbearing durations, women in the six developed countries studied will still have more than 60 percent of their lives left after they have completed their childbearing, the investigators estimate. The fact that childbearing now consumes such a relatively small proportion of women's lives has had a great impact on their economic and social standing, particularly in the Western countries and Australia.

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Declines in Family Size Helped Alleviate Impact Of Rise in Poverty Rates

The decline in family size has had a substantial impact on poverty levels in the United States over the past 20 years, according to the results of a recently reported study.[1] For example, the reduction in the number of children living in poverty between 1964 and 1973 is attributable in part to the decline in average family size during that period; on the other hand, the increase in the number of poor children in the late 1970s and early 1980s occurred in spite of the continued drop in fertility. The researchers who conducted the study suggest that declining family size prevented a large increase in the number of children living in poverty between 1973 and 1978, and moderated the rise in the number of poor children between 1978 and 1983. They also suggest that with the fertility of both whites and blacks now at or below the replacement level, it is unlikely that any further decreases in childbearing will help alleviate future levels of poverty.

Traditional approaches to measuring poverty have concentrated on counting the number of families living in poverty rather than the number of individuals. The poverty level set by the federal government is defined as three times the income needed for a family to maintain a minimally adequate diet (as established by the U.S. Department of Agriculture's 1961 Economy Food Plan). In 1983, the poverty level for a family consisting of two adults under age 65 was $6,667; for a comparable couple with one child, it was $8,015, and the addition of another child raised it to $10,098. The upper limit of the poverty level —$14,901—applied to a couple with five children. As might be expected, the poverty level for a household with one adult was somewhat lower than that for a two-adult household—$5,180 for a person with no children, $6,863 for a person with one child and $8,022 for a person with two children. Thus, the addition of a child to a low-income household can have an important impact. In 1983, the addition of a child would have raised the poverty level by $1,200 to $2,000. "Because family income does not automatically increase with an increase in family size," the investigators point out, "a family as much as $2,000 above the poverty line may fall below the threshold with the birth of another child."

To examine the effects that family size has had on standard measures of poverty, the researchers studied data from three periods: 1964–1973, 1973–1978 and 1978–1983. They found that the proportion of poor families decreased between 1964 and 1973 among all races and types of families, and appears to have continued to drop among black male-headed families between 1973 and 1978. However, between 1978 and 1983, the proportion of families living in poverty increased among all groups.

The investigators also discovered that in 1964, 1973, 1978 and 1983, poverty rates rose with increasing family size among both black and white male-headed and female-headed families. However, average family size dwindled steadily after 1964 among all races and types of families. Among black female-headed households, the average number of children declined from 2.9 in 1964 to 2.1 in 1983; there were comparable declines among black male-headed households (from 3.0 to 2.0), white female-headed households (2.2 to 1.7) and white male-headed households (2.4 to 1.9). According to the researchers, since a decline in family size of one child would have an average "antipoverty effect" of $1,200–$2,000, "the empirical decline in family size should—everything else being equal—depress aggregate poverty rates."

At the same time, the researchers say, the practice of measuring poverty in terms of families "distorts trends in the incidence of poverty among individuals, specifically children." For example, in 1983, 61 percent of black and 40 percent of white female-headed families were living in poverty; however, 71 percent and 47 percent of black and white *children* in such families were living in poverty. The authors' analysis indicated that the decrease in family size after 1964 should have resulted in a decline in the number of children living in poverty, since the number of individuals at risk of poverty would have been smaller. To test their hypothesis, the investigators mathematically decomposed the change in the number of children living in poverty into change in the number of families, change in poverty rates and change in family size. They found that the number of children living in poverty rose between 1978 and 1983, and that an increase in the number of female-headed families was an important component of this trend. Among black female-headed families, the simple increase in the number of such families was the single most important cause of the growing number of poor children in that category. Among all families headed by men and among white female-headed families, the increase in poverty rates between 1978 and 1983 was the most important factor in the rise in the number of children living in poverty.

The researchers also found that in every period of study and among every type of family, the decline in the average size of families reduced the number of children living in poverty; however, the influence of that factor waned with time among male-headed families. On the other hand, among female-headed families in the period 1978–1983, the decline in the size of families was the only major factor that continued to have a moderating influence on the number of poor children. Declining family size tended to soften the effect that increasing poverty rates would otherwise have had on the numbers of poor children between 1978 and 1983, according to the investigators.

Among male-headed families, the interaction between the change in the poverty rate and the change in family size had a substantial impact on the number of children living in poverty in the period 1964–1973. Poverty rates declined most during that period in the families with the greatest number of children, yet these were the families that were becoming less common as average family size decreased. The researchers comment that as a result of these trends, "just under half of the [anticipated] reduction in childhood poverty attributable to changes in family size alone . . . was 'given back' by the redistribution of family size toward parities where declines in poverty level were the lowest." Since 1973, on the other hand, this interaction has been sizable but negative among white male-headed families, indicating that the decline in family size has continued at the same time that poverty levels have been increasing the fastest in the largest families.

Declining family size has exerted a powerful influence over the years on the number of children living in poverty, the researchers conclude. However, findings for the most recent period under study (1978–1983) also suggest that during periods of recession and unemployment, the positive effects of declines in family size at best may only moderate the adverse impact of economic factors. Overall, though, because white fertility is currently below the replacement level and black fertility is at the replacement level, future trends in the number of children living in poverty are not likely to be greatly influenced by changes in family size. The investigators suggest that if average family size and levels of unemployment remain stable and if little growth occurs in real income in the next decade, there is little reason to expect the number of poor children to decline very much. And if current trends toward female-headed households continue, the number of children living in poverty could increase considerably, they warn.

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Japan: Declining Fertility Due Mainly to Marriage Trends, Birth Control Use

Marriage patterns and contraceptive practice are the two major factors responsible for the very low fertility levels that have characterized Japan since the late 1950s, according to an analysis of the country's postwar demographic experience. The study finds that although induced abortion played an important role in lowering fertility during the 15 years following World War II, since 1960 the practice has had a steadily diminishing effect on fertility.[1] The country now has a crude birthrate of 12 per 1,000 population, the lowest level in Japan's history. Contraceptive practice is widespread (63 percent of married women use a method), but it consists overwhelmingly of reliance on the condom and rhythm. The pill and IUD together account for less than 10 percent of all method use.[2]

Sources of Fertility Decline

Between 1947 and 1957, the crude birthrate plummeted from 34 to 17 per 1,000 population. The rate then remained within the 17–

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DIGEST

(*Continued from page 86*)

19 range until 1976, when it once again began to fall. To determine which behavioral and biological factors were behind the decline, researcher Noriko Tsuya computed indices measuring the effects of the four variables, or proximate determinants, that are primarily responsible for the level of fertility in a population: marriage, contraception, induced abortion and infecundability due to breastfeeding. The computation is based on data for 1950–1980 obtained from censuses, vital statistics records and surveys of fertility and family planning behavior. In the analytic model used, the four indices represent the proportion of women married, the extent and effectiveness of contraceptive use among married women, the prevalence of induced abortion among such women,* and lactational infecundability.†

The analysis reveals that of the four proximate determinants, the proportion married exerted the strongest fertility-reducing effect during most of the 30-year observation period. The index of marriage declined from 0.54 in 1950 to 0.42 in 1960, held at that level for the next 15 years or so, and then declined again, to 0.37 in 1980. Thus, the fertility-reducing effect of marriage (interpretable as the postponement of marriage) was such that if all Japanese women of reproductive age in 1950 had been married, the overall level of fertility would have been 46 percent higher, other things being equal; for 1960, the corresponding fertility-reducing effect was 58 percent, and for 1980, 63 percent. (During those three years, the mean ages of women at first marriage were 23.0, 24.4 and 25.2, respectively.)

Contraceptive practice had a much weaker impact on fertility during the early years of the demographic transition, but by 1980 the variable rivaled marriage in its effect. The index of contraception for 1950 had a value of 0.79, indicating that if no married women of reproductive age had used birth control in that year, fertility would have been 21 percent higher. Over the next 30 years, however, the fertility-inhibiting effect of contraceptive use strengthened considerably, rising to 42 percent in 1960, 55 percent in 1970 and about 61 percent from 1975 onward.

Induced abortion was legalized in 1948, and the abortion laws were liberalized in 1949 and 1952. During the period of sharp fertility decline (roughly 1950–1960), induced abortion had about the same impact as contraceptive use: Had no married women resorted to abortion, fertility would have been 28 percent higher in 1950 and 38 percent higher in 1960 (compared with effects of 21 percent and 42 percent, respectively, for contraceptive use). Thereafter, however, the practice of abortion accounted for steadily smaller fertility-reducing effects: 21 percent by 1970, and 13 percent by 1980.

Of the four determinants included in the analysis, infecundability due to breastfeeding has played the smallest role in influencing the level of Japanese fertility. Since 1950, its fertility-inhibiting effect has shrunk from 22 percent to just eight percent.

Contraceptive Practice

The changing nature of contraceptive practice in Japan has been delineated by a series of 18 national surveys carried out for the Mainichi Newspapers beginning in 1950.[3] Since that year, when 20 percent of married women of reproductive age were using a method, contraceptive prevalence has increased substantially, reaching 43 percent in 1959 and 63 percent in 1985. However, throughout the decades of declining or stable fertility, Japanese couples have relied overwhelmingly on the condom and rhythm. In 1950, 40 percent of contraceptive users identified the condom as their main method, and 31 percent named rhythm. By 1985, fully 82 percent of users were relying on the condom—the highest rate of condom use in the world—and 22 percent were relying on rhythm. Only seven percent were using the IUD, and only two percent were taking the pill. Fewer than two percent had undergone sterilization.

According to analysts, the major reason why Japanese couples rely so heavily on the condom and rhythm is that modern methods of fertility control are, or until recently have been, generally unavailable because of legal restrictions on their use. Sterilization is permitted only for married couples in cases of hereditary or mental illness or leprosy, or when pregnancy would endanger the woman's life or health. Not until 1974 did the Japanese government approve the manufacture or importation of IUDs, and it still has not formally approved the use of medicated IUDs; at present, only two types of inert devices are on the market.

The pill, however, is the method that has been most severely affected by legal constraints. Physicians are permitted by law to prescribe steroidal preparations for the treatment of gynecological disorders, but not for contraceptive use. (None of the preparations that are available are low-dose pills, i.e., with less than 50 mcg of estrogen.) Fear of potential side effects is thought to be the principal reason for the government's reluctance to authorize oral contraceptives, and the government's position has apparently reinforced a perception among the public that the pill may be harmful. However, faced with increasing use of the pill under the pretext of gynecological treatment, and with requests from medical and family planning organizations that the pill be legalized, the Ministry of Health and Welfare formed a panel in March 1986 to study the possibility of legalizing low-dose pills following clinical trials. Any such process is expected to take 3–4 years. One researcher notes that "contraceptive behavior . . . will not change dramatically unless the government not only legalizes but also actively promotes pill use in order to dispel doubts concerning its safety." However, because government policies in Japan are influential in affecting people's behavior, "once the government . . . convinces Japanese women of the safety and legitimacy of the pill, change could come quickly," the researcher believes.[4]

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*Abortion reporting in Japan is known to have been incomplete during most of the 30 years studied. The researcher took this factor into account in computing the index of abortion, estimating the proportion of unreported abortions among married women at 72 percent in 1950, 50 percent in 1955, 33 percent in 1965 and 37 percent in 1970. Since 1975, the investigator believes, there has been little underreporting of abortion. (See: N. O. Tsuya, "Proximate Determinants of Fertility Decline in Japan After World War II," dissertation, University of Chicago, Mar. 1986, Chap. V.)

†Each index carries a value ranging from 0 to 1, with 0 indicating a complete fertility-inhibiting effect, and 1 signaling no such effect; the complement of the value of each index constitutes the amount of fertility reduction attributable to that proximate determinant.

Books in Review

Misconstruing Social Change

Population Control Politics: Women, Sterilization and Reproductive Choice
by Thomas M. Shapiro, Temple University Press, Philadelphia, 1985, $29.95, 221 pp.

Reviewed by James W. Reed

In 1983, Thomas M. Shapiro published an article examining the social determinants of female sterilization in the United States. In it he made a strong case for the thesis that some welfare recipients were being coerced into accepting sterilization.[1] Two years later, Shapiro published *Population Control Politics*, a much broader analysis of this same thesis. The book, however, undertakes the far larger task of trying to show not only that abuse occurred but also the reasons why. The result is a work that combines the disciplines of history and the standard behavioral sciences with the art of autobiography and the conventions of radical political analysis. The book demands close attention from anyone interested or involved in the provision of well-designed social or health services, because it provides strong, documented evidence that a discriminatory sterilization policy was practiced in this country up until the late 1970s.

Using data from the National Survey of Family Growth, Shapiro demonstrates that between 1973 and 1976, the strongest predictors of whether a woman would be sterilized were her age and parity. However, he found, women receiving public assistance had significantly higher rates of sterilization than those who were not on welfare, even when age and parity were held constant. Shapiro believes that sterilization abuse was not simply the result of unethical behavior on the part of a few doctors, nurses and social workers. Rather, he argues, women deprived of their procreative capacity by professionals insensitive to the needs and values of the poor in America symbolized the overall treatment of the lower classes at the hands of a "capital class." Shapiro believes that the American "population coalition" acts as one of the agents in the systematic attempts of the capitalist class to suppress society's working classes.

Shapiro's political commitment as a Marxist and as an ideological foe of population control predates his research into the factors that influenced poor women to become surgically sterilized. As a member of the St. Louis branch of the Committee to End Sterilization Abuse (CESA), Shapiro says he was drawn to working on an issue involving population control, sterilization abuse and reproductive rights as a "concrete way to analyze the theoretical and political dynamics among class, race and gender" [p. ix].

The most original and compelling chapter in Shapiro's book is the one in which he presents a history of the CESA, based upon the position papers and correspondence that he kept from the days of his participation in the group's activities, and upon more recent interviews with people who were activists with him at that time. Unfortunately, although this section of the book is written with great personal feeling (in fact, it assumes an almost elegiac tone of regret for lost political intensity), Shapiro, under the influence of Marxist theory and his own personal involvement in the cause, draws the wrong lessons from the history that he so painstakingly reconstructs.

The CESA was founded in 1974 by a group of New York health care professionals who became alarmed at the way some of their colleagues were using excessive zeal to convince Hispanic and black women to become sterilized. These procedures were being performed with money first made available under a federal grant from the Office of Economic Opportunity (OEO) in 1971. About 100,000 sterilizations a year for poor women were financed by those federal funds. However, there were no guidelines to ensure that the rights of medically indigent women to informed consent would be protected.

In 1972, the Department of Health, Education, and Welfare printed guidelines for the provision of federally funded sterilizations, and called a news conference to publicize them. However, since it was an election year, President Nixon did not want to draw attention to his administration's association with federally funded sterilization services, so the conference was canceled, and the guidelines were shelved.

Most of the CESA's members were, according to Shapiro's description, "women involved in patient advocacy or health-care reform" [p. 138]. They were also strongly committed left-wing activists and skilled political leaders. After investigating the extent of patient abuse in New York City's municipal hospitals, the CESA drafted a set of guidelines, which were finally adopted by the Health and Hospitals Corporation in 1975.

New York City Councilman Carter Burden then sponsored a bill calling for the guidelines to be extended to all health facilities in the city—private and public. At public hearings on the proposal, the CESA "stacked the hearing room with supporters, and lined up people to submit testimony. Experts as well as abused welfare recipients presented their views . . . " [p. 141].

The Burden Bill was passed, and the publicity it generated across the county provided the momentum in 1977 for a National Conference on Sterilization Abuse. In 1978, the Department of Health, Education, and Welfare, under the leadership of Joseph Califano, issued detailed informed consent requirements for all sterilization procedures performed with federal funds.* The coalition was obviously able to take a great deal of

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*Under these requirements, women had to be given information about the procedure (and alternatives to it) in the language of their choice, consent to the procedure could not be obtained during a woman's labor, a 30-day waiting period between consent and the sterilization had to elapse, and nobody under the age of 21 could be sterilized.

credit for this political development. However, if the group's political goals had been more far-reaching than the single objective of obtaining enforceable guidelines for sterilization, its demise might have been less inevitable.

Shapiro defends the CESA's decision to concentrate on a single reform issue, claiming that if "[we] had . . . confined our discussion to an ideological one, many people might not have taken us seriously" [p. 146]. Moreover, he is not unaware of the irony in the fact that the CESA's cause was also supported by right-to-life groups. What Shapiro does appear to fail to understand, however, is that the political victory he chronicles was achieved by very much the same means liberal activists successfully used in their earlier campaigns to make birth control services available in the United States.

Shapiro's book is most misconceived, not in its portrayal of the politics of population control, but in its misrepresentation of the fate of the poor in modern America. Shapiro asserts that family planning was conceived as a cheap substitute for social justice, and that the federal government began to promote sterilization at a moment when services for the poor were being eliminated. This is patently not true, since family planning first gained the support of the government in the late 1960s, during the period when Medicare and Medicaid were created, and there was a general expansion of entitlements for the poor. Moreover, the federal government removed barriers to voluntary sterilization as a fertility control measure in 1970, during a period when expenditures for health services of all kinds were increasing rapidly.

Following the lead of feminist historian Linda Gordon,[2] Shapiro makes a distinction between birth control, which, he states, offers reproductive autonomy for the individual, and population control, which, he argues, represents the efforts of the powerful in any society to further their own interests by manipulating the fertility of other socioeconomic and ethnic groups. According to Shapiro, population controllers have shaped the development of the modern welfare state, legitimating their efforts to manipulate the reproductive lives of the masses through the false ideologies of Neo-Malthusianism and eugenics.

Shapiro consistently denigrates the motives and achievements of liberal social reformers, and he generally ignores the diversity and complexity of purpose that have been characteristic of the political coalitions supporting both the welfare state and family planning since World War II. I have argued elsewhere that the distinction between birth control and population control is not a very useful analytical tool,[3] but this distinction serves Shapiro's need to portray complex issues in Manichaean terms, with the radicals and victims of capitalism struggling against "the neoconservatives, population control groups, family planning professionals, and the capitalist class"—all of whom "generally follow the Neo-Malthusian line" [p. 181].

Shapiro's history of the activities of the CESA offers an instructive example of the ways in which political radicals have attempted to use a particular social issue (especially if it involves the element of injustice) to disrupt successful liberal coalitions. It also provides a lesson about how responsive to abuses of human rights the American political system can be, once such abuses have been demonstrated. Shapiro, however, believes that his account reveals only the degradation to which welfare recipients are subjected under the capitalist welfare system. One could very well argue quite the contrary: that the history of the CESA documents the openness of the American political system, and illustrates the widespread respect for the rights of all (including welfare recipients) that is so fundamental to American society.

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(*Continued from page 44*)

cy rates are an outcome of the social context in which teenagers live. Both organized family planning services and abortion services are interpreted as responses to high levels of unintended pregnancy. Although both types of service are offered at the same location in about 20 percent of cases, there is no question of overlap, since the facilities for each are administered as separate clinics (even if the same agency runs them), and are counted separately.

It is generally accepted that the birthrate in a particular period reflects conditions at that time and is an appropriate control for disentangling the relationship between pregnancy and clinic services. Controlling for the availability of abortion services becomes particularly important when the relationship between the use of family planning clinics and birthrates, abortion rates and abortion ratios is being examined. We controlled for the availability of abortion services in order to remove any degree of overlap in the effect of abortion services and family planning clinic services. This analysis showed that the association of family planning clinic use with lower teenage birthrates was independent of the availability of abortion services, and that the positive association of clinic use with abortion rates and ratios was lowered slightly when the availability of abortion services was taken into account.

Since organized family planning clinics have been concentrated most heavily in areas of high rates of unintended pregnancy, it would be preferable to control for previous levels of unintended pregnancy before examining any association with the use of family planning clinics. The ability to control for previous rates is especially pertinent when information on levels of sexual activity and contraceptive use is not available—as is true for the early 1970s, when the current network of family planning clinics and abortion providers was formed. Although inadequate, the 1970 birthrate is an appropriate control for levels of pregnancy around this time. The existence of large abortion providers is also less than adequate as a proxy for rates of unintended pregnancy or abortion, but it is likely that abortion facilities were established in areas where rates of unintended pregnancy were already high; this measure was, therefore, judged to be the best available proxy variable.

However, any defense of the use of these control variables by no means detracts from the underlying validity of Mr. Loken's concern: The controls that we used for the earlier levels of unintended pregnancy are highly imperfect. While this may be a less crucial problem than the complete lack of state-level data on sexual activity and contraceptive use, it nonetheless hampers any analysis and interpretation of the effects of family planning clinic use on adolescent reproductive behavior.

References

1. U.S. Bureau of the Census, "Childspacing Among Birth Cohorts of American Women: 1905–1959," *Current Population Reports*, Series P-20, No. 385, 1984, Table 8.

2. E. F. Jones et al., *Teenage Pregnancy in Industrialized Countries*, Yale University Press, New Haven, 1986, p. 42.

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ORAL CONTRACEPTIVE (O.C.) AGENTS

Indications Prevention of pregnancy. *DOSE-RELATED RISK OF THROMBOEMBOLISM.* Because studies have shown a positive association between OC estrogen dose and risk of thromboembolism, it is prudent to minimize estrogen exposure. Prescribe an OC with the least amount of estrogen compatible with an acceptable pregnancy rate and patient acceptance. Start new users on OCs containing 0.05 mg or less of estrogen.

Contraindications 1. Known or suspected pregnancy (see Warning #5). 2. Thrombophlebitis or thromboembolic disorders. 3. Past history of deep vein thrombophlebitis or thromboembolic disorders. 4. Undiagnosed abnormal genital bleeding. 5. OCs should not be used by women who have or have had any of the following: a. cerebral vascular or coronary artery disease, including myocardial infarction; b. known or suspected carcinoma of the breast; c. known or suspected estrogen dependent neoplasia; d. benign or malignant liver tumor that developed during use of OCs or other estrogen containing products.

> **WARNINGS: Cigarette smoking increases the risk of serious cardiovascular side effects from OC use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use OCs should be strongly advised not to smoke.**
>
> The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective, case control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS. Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI). Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S. so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE. Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK. Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES. A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34 – 5/100,000; ages 35-44 – 33/100,000; ages 45-49 – 140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34 – 1/6700 for nonsmokers and 1/2000 for smokers; ages 45 and over – 1/2500 for nonsmokers and 1/500 for smokers. Risk appeared to increase with parity, but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth, except for OCs in women over 40 who smoke. (Rates given for pill only/smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS – RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40 +
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C,D	C
Nonsmokers (other predisposing conditions)	C	C,B	B,A

A – Use associated with very high risk
B – Use associated with high risk
C – Use associated with moderate risk
D – Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions.* Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden, or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma.* Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is nevertheless essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors.* Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen." The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* Use of female sex hormones – estrogenic and progestational agents – during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1:1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1:1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease.* Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects.* Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure.* An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences," or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache.* Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility.* There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding.* OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast fed child have not been determined. If feasible, defer OC use until the infant has been weaned.

Precautions *GENERAL.* 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. *DRUG INTERACTIONS.* OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS.* See Warnings. *PREGNANCY.* Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS.* See Warnings.

Adverse Reactions An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hemorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package insert)

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Family Planning
Perspectives

Volume 19, Number 3, May/June 1987

Staffing Patterns in Family Planning Clinics
Working with Teenage Fathers

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Before prescribing, please see full prescribing information. A Brief Summary follows:

INDICATIONS AND USAGE: Loestrin is indicated for the prevention of pregnancy in women who elect to use OCs as a method of contraception. **Dose-Related Risk of Thromboembolism from Oral Contraceptives:** Two studies have shown a positive association between the dose of estrogens in OCs and the risk of thromboembolism. For this reason, it is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The OC product prescribed for any given patient should be that product containing the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance. It is recommended that new acceptors of OCs be started on preparations containing 0.05 mg or less of estrogen. **CONTRAINDICATIONS:** OCs should not be used in women with any of the following conditions: 1. Thrombophlebitis or thromboembolic disorders; 2. A past history of deep vein thrombophlebitis or thromboembolic disorders; 3. Cerebral vascular or coronary artery disease; 4. Known or suspected carcinoma of the breast; 5. Known or suspected estrogen-dependent neoplasia; 6. Undiagnosed abnormal genital bleeding; 7. Known or suspected pregnancy (see Warning No. 5); 8. Benign or malignant liver tumor that developed during the use of OCs or other estrogen-containing products.

WARNINGS

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems:* An increased risk of thromboembolic and thrombotic disease associated with the use of OCs is well established. Three principal studies in Great Britain and three in the US have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic. These studies estimate that users of OCs are 4 to 11 times more likely than nonusers to develop these diseases without evident cause. **Cerebrovascular Disorders:** In a collaborative American study of cerebrovascular disorders in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than in nonusers and the risk of thrombotic stroke was 4 to 9.5 times greater in users than in nonusers. **Myocardial Infarction:** An increased risk of MI associated with the use of OCs has been reported, confirming a previously suspected association. These studies, conducted in the UK, found, as expected, that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia), the higher the risk of developing MI, regardless of whether the patient was an OC user or not. OCs, however, were found to be a clear additional risk factor. In terms of relative risk, it is estimated that OC users who do not smoke (smoking is considered a major predisposing condition to MI) are about twice as likely to have a fatal MI as nonusers who do not smoke. OC users who are also smokers have about a 5-fold increased risk of fatal infarction compared with users who do not smoke, but about a 10- to 12-fold increased risk compared with nonusers who do not smoke. Furthermore, the amount of smoking is an important factor. In determining the importance of these relative risks, however, the baseline rates for various age groups must be given serious consideration. The importance of other predisposing conditions mentioned above in determining relative and absolute risks has not yet been quantified; it is quite likely that the same synergistic action exists, perhaps to a lesser extent. **Risk of Dose:** In an analysis of data derived from several national adverse reaction reporting systems, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in OCs. Preparations containing 100 mcg or more of estrogen were associated with a higher risk of thromboembolism than those containing 50 to 80 mcg of estrogen. Their analysis did suggest, however, that the quantity of estrogen may not be the sole factor involved. This finding has been confirmed in the US. **Persistence of Risk:** In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI. In addition, one prospective study suggested the persistence of risk for subarachnoid hemorrhage. **Estimate of Excess Mortality from Circulatory Diseases:** A large prospective study carried out in the UK estimated the mortality rate per 100,000 women per year from diseases of the circulatory system for users and nonusers of OCs according to age, smoking habits, and duration of use. The overall excess death rate annually from circulatory diseases for OC users was estimated to be 20 per 100,000 (ages 15 to 34 – 5/100,000; ages 35 to 44 – 33/100,000; ages 45 to 49 – 140/100,000), the risk being concentrated in older women, in those with a long duration of use, and in cigarette smokers. It was not possible, however, to examine the interrelationships of age, smoking, and duration of use, nor to compare the effects of continuous versus intermittent use. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all of these deaths occurred in women 35 or older. Until larger numbers of women under 35 with continuous use for 5 or more years are available, it is not possible to assess the magnitude of the relative risk for this younger age group. The available data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. The estimates of risk of death for each method include the combined risk of the contraceptive method (eg, thromboembolic and thrombotic disease in the case of OCs) plus the risk attributable to pregnancy or abortion in the event of method failure. This latter risk varies with the effectiveness of the contraceptive method. The study concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of OCs in women over 40 who smoke. The lowest mortality is associated with the condom or diaphragm backed up by early abortion. The risk of thromboembolic and thrombotic disease associated with OCs increases with age after approximately age 30 and, for MI, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia and especially by cigarette smoking. The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders (eg, thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). If any of these occurs or is suspected, the drug should be discontinued immediately. A 4- to 6-fold increased risk of postsurgical thromboembolic complications has been reported in OC users. If feasible, OCs should be discontinued at least 4 weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization. 2. *Ocular Lesions:* There have been reports of neuro-ocular lesions, such as optic neuritis or retinal thrombosis, associated with the use of OCs. Discontinue OC medication if there is unexplained, sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma:* Long-term continuous administration of either natural or synthetic estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver. Certain synthetic progestogens, none currently contained in OCs, have been noted to increase the incidence of mammary nodules, benign and malignant, in dogs. In humans, three case control studies have reported an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women. One publication reported on the first 21 cases submitted by physicians to a registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the cases found in women without predisposing risk factors for adenocarcinoma of the endometrium (eg, irregular bleeding at the time OCs were first given, polycystic ovaries), nearly all occurred in women who had used a sequential OC. These products are no longer marketed. No evidence has been reported suggesting an increased risk of endometrial cancer in users of conventional-combination or progestogen-only OCs. Several studies have found no increase in breast cancer in women taking OCs or estrogens. One study, however, while also noting no overall increased risk of breast cancer in women treated with OCs, found an excess risk in the subgroups of OC users with documented benign breast disease. A reduced occurrence of benign breast tumors in users of OCs has been well documented. In summary, there is at present no confirmed evidence from human studies of an increased risk of cancer associated with OCs. Close clinical surveillance of all women taking OCs is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms should be monitored with particular care if they elect to use OCs. 4. *Hepatic Tumors:* Benign hepatic adenomas have been found to be associated with the use of OCs. One study showed that OC formulations with high hormonal potency were associated with a higher risk than lower potency formulations. Although benign, hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage. This has been reported in short-term as well as long-term users of OCs. Two studies relate risk with duration of use of the contraceptive, the risk being much greater after 4 or more years of OC use. While hepatic adenoma is a rare lesion, it should be considered in women presenting with abdominal pain and tenderness, abdominal mass or shock. A few cases of hepatocellular carcinoma have been reported in women taking OCs. The relationship of these drugs to this type of malignancy is not known at this time. 5. *Use in or Immediately Preceding Pregnancy: Birth Defects in Offspring, and Malignancy in Female Offspring:* The use of female sex hormones – both estrogenic and progestational agents – during early pregnancy may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been demonstrated to be of the order of 1 in 1,000 exposures or less. Although there is no evidence at the present time that OCs further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use OCs. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether this condition is a precursor of vaginal malignancy. Male children so exposed may develop abnormalities of the urogenital tract. Although similar data are not available with the use of other estrogens, it cannot be presumed that they would not induce similar changes. An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of sex hormones, including OCs, in pregnancy. One case control study has estimated a 4.7-fold increase in risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb-reduction defects in exposed fetuses is somewhat less than 1 in 1,000 live births. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. It is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period, and further use of OCs should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed in the light of these risks. It is also recommended that women who discontinue OCs with the intent of becoming pregnant use an alternate form of contraception for a period of time before attempting to conceive. Many clinicians recommend 3 months although no precise information is available on which to base this recommendation. The administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy. 6. *Gallbladder Disease:* Studies report an increased risk of surgically confirmed gallbladder disease in users of OCs and estrogens. In one study, an increased risk appeared after 2 years of use and doubled after 4 or 5 years of use. In one of the other studies, an increased risk was apparent between 6 and 12 months of use. 7. *Carbohydrate and Lipid Metabolic Effects:* A decrease in glucose tolerance has been observed in a significant percentage of patients on OCs. For this reason, prediabetic and diabetic patients should be carefully observed while receiving OCs. An increase in triglycerides and total phospholipids has been observed in patients receiving OCs. The clinical significance of this finding remains to be defined. 8. *Elevated Blood Pressure:* An increase in blood pressure has been reported in patients receiving OCs. In some women, hypertension may occur within a few months of beginning OC use. In the first year of use, the prevalence of women with hypertension is low in users and may be no higher than that of a comparable group of nonusers. The prevalence in users increases, however, with longer exposure, and in the fifth year of use is two and a half to three times the reported prevalence in the first year. Age is also strongly correlated with the development of hypertension in OC users. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure when given OCs. Hypertension that develops as a result of taking OCs usually returns to normal after discontinuing the drug. 9. *Headache:* The onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of OCs and evaluation of the cause. 10. *Bleeding Irregularities:* Breakthrough bleeding, spotting and amenorrhea are frequent reasons for patients discontinuing OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, nonfunctional causes should be borne in mind. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, adequate diagnostic measures are indicated to rule out pregnancy or malignancy. If pathology has been excluded, time or a change to another formulation may solve the problem. Changing to an OC with a higher estrogen content, while potentially useful in minimizing menstrual irregularity, should be done only if necessary since this may increase the risk of thromboembolic disease. Women with a past history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of OCs. Women with these preexisting problems should be advised of this possibility and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may also occur in women without previous irregularities. 11. *Ectopic Pregnancy:* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures. 12. *Breast Feeding:* OCs given in the postpartum period may interfere with lactation. There may be a decrease in the quantity and quality of the breast milk. Furthermore, a small fraction of the hormonal agents in OCs has been identified in the milk of mothers receiving these drugs. The effects, if any, on the breast-fed child have not been determined. If feasible, the use of OCs should be deferred until the infant has been weaned. **PRECAUTIONS: General:** 1. A complete medical and family history should be taken prior to the initiation of OCs. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical examination. 2. Under the influence of estrogen-progestogen preparations preexisting uterine leiomyomata may increase in size. 3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the medication and use an alternative method of contraception in an attempt to determine whether the symptom is drug related. 4. OCs may cause some degree of fluid retention. They should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma, or cardiac or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice while receiving OC therapy. If jaundice develops in any patient receiving such drugs, the medication should be discontinued. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution. 7. OC users may have disturbances in normal tryptophan metabolism which may result in a relative pyridoxine deficiency. The clinical significance of this is undetermined. 8. Serum folate levels may be depressed by OC therapy. Since the pregnant woman is predisposed to the development of folate deficiency and the incidence of folate deficiency increases with increasing gestation, it is possible that if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and complications attributed to this deficiency. 9. The pathologist should be advised of OC therapy when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs: a. Increased sulfobromophthalein retention; b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability; c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG, free T4 concentration is unaltered; d. Decreased pregnanediol excretion; e. Reduced response to metyrapone test. **INFORMATION FOR THE PATIENT:** See Patient Labeling. **DRUG INTERACTIONS:** Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin. **CARCINOGENESIS, PREGNANCY, NURSING MOTHERS:** See Contraindications and Warnings. **ADVERSE REACTIONS:** An increased risk of the following serious adverse reactions has been associated with the use of OCs: Thrombophlebitis, pulmonary embolism; coronary thrombosis; cerebral thrombosis; cerebral hemorrhage; hypertension; gallbladder disease; benign hepatomas; congenital anomalies. There is evidence of an association between the following conditions and the use of OCs, although additional confirmatory studies are needed: Mesenteric thrombosis; neuro-ocular lesions, eg, retinal thrombosis and optic neuritis. The following adverse reactions have been reported in patients receiving OCs and are believed to be drug related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: Gastrointestinal symptoms (such as abdominal cramps and bloating); breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; amenorrhea during and after treatment; temporary infertility after discontinuance of treatment; edema; chloasma or melasma which may persist; breast changes: tenderness, enlargement and secretion; change in weight (increase or decrease); change in cervical erosion and cervical secretion; possible diminution in lactation when given immediately postpartum; cholestatic jaundice; migraine; increase in size of uterine leiomyomata; rash (allergic); mental depression; reduced tolerance to carbohydrates; vaginal candidiasis; change in corneal curvature (steepening); intolerance to contact lenses. The following adverse reactions have been reported in users of OCs, and the association has been neither confirmed nor refuted: Premenstrual-like syndrome; cataracts; changes in libido; chorea; changes in appetite; cystitis-like syndrome; headache; nervousness; dizziness; hirsutism; loss of scalp hair; erythema multiforme; erythema nodosum; hemorrhagic eruption; vaginitis; porphyria; hemolytic uremic syndrome. **ACUTE OVERDOSE:** Serious effects have not been reported following acute ingestion of large doses of OCs by young children. Overdosage may cause nausea, and withdrawal bleeding may occur in females. **HOW SUPPLIED:** Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol. Available in packages of five compacts and packages of five refills. Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets. Each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol. Each brown tablet contains 75 mg ferrous fumarate, USP. Available in packages of five compacts and packages of five refills. Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol. Available in packages of five compacts and packages of five refills. Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol. Each brown tablet contains 75 mg ferrous fumarate, USP. Available in packages of five compacts and packages of five refills.

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Barriers to Contraceptive Services

By Jane Silverman, Aida Torres and Jacqueline Darroch Forrest

Background

Rates of unintended pregnancy and abortion in the United States are among the highest in the Western world.[1] More than half of the approximately six million pregnancies that occur each year are unintended, and half of those unintended pregnancies—about 1.6 million—end in abortion.[2] Unplanned and unwanted births can have a severe impact on the lives of women and their families, as well as on the lives and health of their babies.

The high levels of unintended pregnancy found in the United States are due mainly to the fact that a sizable minority of women who are at risk of unintended pregnancy do not use a contraceptive method; in addition, many who do rely on contraceptives fail to use these methods correctly and consistently.[3] The relationship between poor contraceptive use and unintended pregnancy is especially strong among young women, poor women and those who are members of ethnic or racial minorities. These women, who experience relatively high rates of unintended pregnancy, have higher levels of nonuse than do other women and are more likely to experience failures even while using effective methods.[4] Nationally, although only about 12 percent of women at risk of pregnancy do not use contraceptives, this small proportion accounts for almost half of all unintended pregnancies annually.[5]

The research project described in this article was intended to study the factors—among them, the accessibility of medical contraceptive services—thought to be related to the nonuse of contraceptive methods. As part of our study of accessibility, we sought to identify "structural" factors that might limit women's ability to obtain family planning services. In addition, we wanted to determine whether the barriers to contraceptive use that women identified actually existed or whether, in fact, they represented inaccurate perceptions of providers' policies and practices.

Most previous studies have tried to address the issue of access to family planning services by looking at self-selected populations, such as clinic patients, or by focusing exclusively on young adults.[6] The study described here, however, represents an attempt to determine the contraceptive needs and preferences of low-income women, regardless of whether they were currently practicing contraception or whether they had ever visited a provider of medical family planning services.

Methodology

There were two major components to the research reported in this article. A telephone survey of women at risk of unintended pregnancy was conducted in four locations—an economically depressed city in the Northeast, one section of a large city in the Midwest, and two cities on the west coast with substantial Hispanic populations. These sites were chosen in order to satisfy the following criteria: size (medium to large); relative isolation from other large cities or neighborhoods; ethnic or racial diversity sufficient to ensure that white, black and Hispanic women were equally represented; and a limited number of family planning agencies within the community.

Inclusion in the survey was limited to women 18–35 years of age who had had sexual intercourse at some time, who were neither pregnant nor trying to become pregnant, and who were not surgically or nonsurgically sterile (themselves or their partners). Furthermore, the women 20 or older had to have an annual family income below 200 percent of the federal poverty level.[*] A total of 760 interviews were conducted (approximately 200 per community); these were almost evenly divided between white, black and Hispanic women. The overall response rate was 74 percent. The women were asked about their use of and attitudes toward contraceptive methods, and about their knowledge of and perceptions of private physicians and clinics that provide family planning services. (The development of the questionnaire had been guided by the results of an earlier series of focus-group interviews with comparable women.)

The second component of the study was a mail survey of all family planning clinics and private obstetrician-gynecologists in each of the four communities, as well as of other physicians and clinics mentioned by the women. (In all, 102 clinics and 353 physicians were surveyed.) The response rate for clinics was over 60 percent in each area after the completion of three follow-up attempts (two by mail and one by telephone); however, fewer than one-quarter of the private physicians responded to the questionnaire after one mail follow-up.

The family planning providers were asked about the same specific policies and practices on which the women were queried. The fact that the two surveys contained parallel questions about services and policies allowed us to directly compare the women's perceptions about a specific physician or clinic in their community with relevant information given by that provider. We also visited selected providers to attempt to identify any special problems they had in reaching low-income and minority women, and to obtain additional

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[*] In 1986, the federally defined poverty level for a family of four was $11,000.

qualitative information about service provision.

Preliminary findings from the study were formally presented to a group of providers from each community. In addition, The Alan Guttmacher Institute organized a day-long conference attended by representatives of a number of family planning agencies and professional organizations to review the study findings and explore their policy implications.

The research described in this article has a number of limitations that need to be emphasized. First, the sampling criteria described above prevented the study results from being generalizable to all women of reproductive age. Women under age 18 and over age 35 were excluded, as were women with medium or high incomes. Similarly, the racial and ethnic distribution of the sample does not reflect that of the entire country, although few differences were found in the overall responses of women in different racial and ethnic groups, at least on key issues. Women's responses were surprisingly similar across the four study sites; nevertheless, the generalizability of these results to other places or to the entire United States is limited. One final drawback of the study is that not all types of contraceptive providers were represented. In particular, pharmacies and other outlets for nonprescription contraceptives were excluded from the sample.

Contraceptive Use

Although 94 percent of the women said that they had used some method of contraception at some time, the proportion who were not currently using a contraceptive method was surprisingly high. Among the women who were sexually active at the time of the survey, 23 percent were not practicing contraception. When the nonusers were asked why, about half gave reasons based on negative attitudes toward contraceptive methods: Twenty-six percent said that they either were concerned about potential side effects or had actually experienced side effects from the use of contraceptives; another 25 percent said that they simply did not like to practice birth control. An additional 11 percent of the respondents who were not using a method explained that contraceptive use was unacceptable to their partners or was not suitable for their current relationship. Thirteen percent said that they had just had a baby; many of these women were breastfeeding and may have felt that they should not, or did not need to, use contraceptives. Only nine percent of the nonusers mentioned a reason that could be considered related to the provision of services (cost, for example, or no more contraceptive supplies on hand). Four percent thought that they might want another child, and the remaining 13 percent said that they did not know why they were not using birth control, or they gave some other reply.

Among women who were currently practicing contraception, the majority were relying on the pill (64 percent), while 11 percent each were using the condom or the IUD; fewer than five percent of current users were relying on each of the remaining methods.

Women's concerns about specific methods were explored in two ways—by eliciting the respondent's reasons for switching from one method to another (if she had done so), and by asking her why she had chosen her current method over other available methods. (Nonusers were asked first to identify what method, if any, they would choose in the future, and then to compare that method with other available methods.)

The women expressed strikingly similar negative attitudes toward contraceptive methods. The dominant reason that respondents gave for selecting a method other than the pill or IUD was fear of side effects and the potential health risks of those methods. The women who shunned the condom did so because of concerns about its effectiveness and objections about its intrusiveness during intercourse. Many women mentioned the negative reaction condoms elicited from their sexual partners. Women who objected to the diaphragm complained about its messiness as well as its intrusiveness; concerns about this method's effectiveness were secondary.

The reasons women gave for switching from one method to another bore out these negative responses (see Table 1). Three-quarters of the women who had abandoned use of the pill or the IUD had done so because of fears of side effects or concerns over their health. On the other hand, nearly all of the women who had switched from practicing rhythm or withdrawal, and about half of those who had stopped using barrier methods, had done so because of concern over the effectiveness of these methods. One-quarter of the women who had stopped using a barrier method said they had done so because it interfered with sexual intercourse or was a "hassle."

To better understand the respondents' beliefs about the effectiveness of the method they were using at the time of the survey, we asked them to estimate the percentage of women employing that method who would become pregnant in the course of a year. The median response was three percent for pill and IUD users, compared with seven percent for women using the diaphragm, 10 percent for those using foam, 15 percent for women whose partners used the condom, 25 percent for women who depended on rhythm and 50 percent for those relying on withdrawal. These results indicate that the women were generally knowledgeable about the effectiveness of the pill, IUD and condom, but overestimated the effectiveness of the diaphragm and foam. Indeed, users of the diaphragm and foam gave these methods a higher effectiveness rating than condom users gave the condom.

Respondents were also asked to assess their personal risk of becoming pregnant while using their current contraceptive method. Only 63 percent of all current users said that they were "very sure" that they would not become pregnant; the proportion was 72 percent among those using the pill, 58 percent among IUD users, 55 percent for women relying on the diaphragm, 50 percent among those who used spermicides and 46 percent among respondents whose partners used condoms. Thus, even among women who were using effective methods such as the pill or IUD, a substantial proportion felt that they could become pregnant; condom users were more likely to express that opinion than were women using other barrier methods.

In summary, within the study population, both nonuse of contraceptives and the use of less-effective methods appear to be related to method-related fears, a dislike of available methods and general negative feelings about contraception. In turn, the less-effective methods may at times be avoided because women view them as of-

Table 1. Percentage distribution of women who had switched contraceptive methods, by reason given for switching, according to method abandoned, 1986

Reason	Method abandoned		
	Pill/ IUD (N=137)	Condom/ diaphr./ spermicides (N=147)	Rhythm/ withdrawal (N=57)
Side effects	58	8	0
Health concerns	18	5	2
Effectiveness	10	48	86
Interference/ inconvenience	4	25	4
Cost	2	1	0
Partner objection	2	6	7
Other	6	5	1
Total	100	100	100

Table 2. Percentage distribution of women by the degree of importance they attributed to various provider services or policies in influencing their decision to utilize a provider (N=760)

Service or policy	Importance				
	Very	Somewhat	Not very	Not at all	Total
Staff spends time explaining	91	8	1	1	100
Has same clinician each visit	81	13	5	1	100
Has sliding fees	81	15	3	2	100
Cost	73	16	7	4	100
Is treated by MD	65	21	10	4	100
Can make appointments	59	31	8	3	100
Has evening hours	59	24	12	5	100
Has weekend hours	55	24	16	5	100
Accepts walk-in patients	49	25	19	8	100
Accommodates children	42	23	20	15	100

fering less protection against pregnancy and because the women dislike their coitus-dependent qualities. The respondents seldom reported structural or provider-related concerns, such as cost, to be barriers to contraceptive use.

Obtaining Family Planning Services

Overall, 91 percent of the respondents stated that they had visited a clinic or a physician for family planning services at some time in their lives. Since lack of knowledge about the existence of a provider is perhaps the most obvious potential barrier to the use of medical contraceptive services, we asked each woman who had never visited a provider to give the name and location of a specific clinic and private physician in her area to which she could go for birth control services. Most (62 percent) were able to name a clinic; strikingly fewer (28 percent) were able to name a private physician, and a substantial minority (27 percent) could name neither a physician nor a clinic.

Among those who had never gone to a doctor or clinic for family planning services (or who had not visited one in their current area of residence and had lived there for at least three years), three out of five gave reasons related to birth control methods themselves: Twenty-six percent said that they did not use medically prescribed methods; 25 percent said that they disliked birth control in general; and nine percent said that they were afraid of using medically prescribed methods. An additional nine percent each mentioned the cost of services and lack of knowledge about where to obtain them; the remaining women gave "don't know" as their answer (12 percent) or gave other, idiosyncratic responses unrelated to previously mentioned themes (nine percent). These results indicate that attitudes toward contraceptive methods (specifically toward prescription methods) are a hurdle that many women must clear before approaching a medical family planning provider.

Table 3. Percentage distribution of women by the type of family planning provider they visited most recently and by the type of provider they would prefer to see (N=760)

Provider	Visited most recently	Prefer
Private MD	36	61
Clinic	49	27
No preference	na	12
Never visited	9	na
Not in area	7	na
Total	100	100

Note: In this and subsequent tables, na=not applicable.

However, although structural factors play a relatively small role in a woman's decision to seek out a medical family planning provider, they do influence what type of provider a woman will choose once she has decided to use a prescription method. All respondents were asked to rate how important each of 10 services or policies would be to them if they were deciding to go to a family planning provider. As Table 2 indicates, the issues that the largest proportion of women rated as "very important" to them were those bearing on personalized care and on financial accessibility: Ninety-one percent of respondents thought it very important that provider staff spend enough time explaining things to patients, and 81 percent, that patients be able to see the same clinician on each visit; 81 percent regarded the availability of a sliding-fee scale, and 73 percent considered cost, to be highly important characteristics. Being seen by a medical doctor was very important to 65 percent of the women. The remaining attributes, all of them related to convenience, were generally deemed less critical: Fifty-nine percent said that the ability to make an appointment in advance and the availability of evening hours were very important, 55 percent cited the availability of weekend hours, 49 percent stressed the acceptance of walk-in patients and 42 percent emphasized the willingness of a facility to accommodate patients' children.

As is shown in Table 3, 49 percent of the respondents had attended a clinic at their most recent visit for family planning services, 36 percent had seen a private physician and 16 percent either had never been to a provider or had never visited one in the area in which they resided at the time of the survey. Although more women had gone to clinics than to private doctors, three out of five of the respondents stated that they would prefer to go to a private physician for birth control services if they had the choice. This difference between what the respondents preferred and what they did may reflect the difficulty they had in finding a provider that offered both personalized care and low cost.

Women's Views of Providers

Table 4 shows the women's responses to a series of questions concerning the types of services and policies they believed they would be likely to encounter while attending a clinic or seeing a private physician. The greatest differences appear in women's perceptions about fee-related issues. Seventy-eight percent of the women believed that clinics would accept Medicaid or Medi-Cal, compared with 64 percent who said that physicians would do so. (In fact, 90 percent of clinics surveyed here accepted reimbursement from Medicaid or Medi-Cal, compared with 50 percent of physicians.) Also, the respondents considered clinics to be more likely than physicians to offer sliding fees (68 percent compared with 28 percent), to provide free services (58 percent and 18 percent, respectively) and to cost less (67 percent compared with 34 percent).

Physicians were viewed somewhat more favorably than clinics with respect to quality of care. Eighty-seven percent of women said that physicians treat patients with respect, compared with 75 percent who said this of clinics; 89 percent and 83 percent of women, respectively, said that physicians offer adequate privacy and provide quality medical care, compared with 65 percent and 60 percent, respectively, who said this of clinics. Although privacy was not defined in the survey questionnaire, the results of the focus-group discussions held as a preliminary to the survey suggest that the women were referring both to physical privacy in the examining room and to privacy during intake and medical interviews.

Table 4. Percentage of women who believed that they would or would not be likely to find various services and policies when attending a clinic or seeing a private physician (N=760)

Policy or service	Provider							
	Private MD				Clinic			
	Yes	No	Somewhat	Don't know	Yes	No	Somewhat	Don't know
Convenience								
Accepts walk-in patients	34	59	na	8	46	45	na	9
Has evening hours	54	35	na	11	56	33	na	11
Has weekend hours	43	43	na	15	40	43	na	18
Accommodates children	72	16	na	12	74	16	na	10
Fees								
Accepts Medicaid or Medi-Cal	64	11	na	25	78	5	na	18
Has sliding fees	28	48	na	24	68	12	na	20
Offers free services	18	55	na	27	58	18	na	24
Costs a lot	29	34	26	11	8	67	14	11
Quality of care								
Spends time explaining	79	8	8	5	71	12	13	4
Treats patients with respect	87	3	7	3	75	6	16	3
Offers quality medical care	83	4	9	4	60	12	24	5
Offers adequate privacy	89	4	3	4	65	17	15	4
Has same clinician each visit	na	na	na	na	34	54	na	13
Is treated by MD	na	na	na	na	72	16	na	11
Other								
Has Spanish-speaking staff	61	21	na	19	83	6	na	11
Has parental notification policy	36	18	na	46	24	33	na	43

Only clinic patients were asked about seeing the same clinician at each visit and being treated by a medical doctor. Thirty-four percent of the women said that clinic patients see the same physician at each visit, and 72 percent believed that patients attending clinics are always treated by a physician.

When the women were asked why they preferred a certain type of provider, 78 percent of those who said they would rather see a private physician cited a reason related to quality of care, as is shown in Table 5: Forty-six percent mentioned more personalized care and 12 percent cited the fact that they were able to see the same doctor or clinician at each visit. Another 20 percent said that they felt they received better medical care from a physician than at a clinic. In contrast, the key quality-of-care issues mentioned by women who preferred clinics were better medical care and the provision of more information (cited by 13 percent and 12 percent of respondents who preferred clinics). The chief reason for preferring clinics, given by 41 percent of the women, was cost.

As Table 4 demonstrated, there was little difference between women's perceptions of the comparative convenience of physicians and clinics, except that the respondents believed clinics to be more likely than physicians to accept walk-in patients (46 percent and 34 percent, respectively). Clinics were considered much more likely than physicians' offices to have Spanish-speaking staff members (83 percent compared with 61 percent) and somewhat less likely to notify the parents of minors seeking family planning services (24 percent compared with 36 percent). Young teenagers, for whom the issue of parental notification is most salient, were not included in this study; however, it was somewhat surprising to find that large proportions of women did not know about the parental notification policies of either private doctors (46 percent) or clinics (43 percent). Twenty-five percent of 18–19-year-olds said that they knew nothing about the parental notification policies of clinics (not shown).

Certain beliefs about family planning providers appeared to predominate, regardless of whether the respondents had ever been to a particular type of provider or to any provider. For example, 65 percent of women who had most recently been to a clinic said that clinics offered sliding fees; the same proportion of respondents who had never been to a physician or clinic for family planning services agreed, as did 72 percent of women who had most recently visited a private physician. Likewise, the majority of respondents in these various subgroups believed that clinics were inexpensive and had Spanish-speaking staffs. With regard to private physicians, a high proportion of respondents generally agreed that they offered quality medical care.

In addition, women who had been to a clinic generally viewed the quality of care at clinics more favorably than did those who had never been to one. For example, women who had attended a clinic were more likely than those who had not to say that clinic staff spend enough time explaining things (72 percent compared with 59 percent). Similarly, a greater percentage of clinic patients said that clinics treat patients with respect, provide quality medical care and offer patients adequate privacy. Women who were patients of private physicians and had never been to a clinic were the least likely to agree with these statements. It is encouraging that family planning patients are more likely to have a favorable impression about the quality of care offered at a clinic if they have actually been to one.

Accuracy of Perceptions

Despite the apparent strength of some of the women's beliefs about providers, these beliefs did not always coincide with what the providers themselves reported about their policies and services. To assess the accuracy of consumers' perceptions, we matched data obtained from a specific physician or clinic with the comparable responses of each woman who had mentioned that provider (whether or not she had actually ever been to or obtained services from that provider).* Although we will use the term "accuracy" to describe the

(Continued on page 101)

Table 5. Percentage distribution of women who reported preferring a private physician or a clinic, by reason given

Reason	Private MD (N=462)	Clinic (N=206)
Quality of care	78	25
More personalized	46	*
Same clinician	12	*
Better medical care	20	13
More information	*	12
Environment	10	*
Convenience	9	9
Cost	*	41
Familiarity	*	13
Don't know/other	4	11
Total	100	100

* Less than 0.5 percent.

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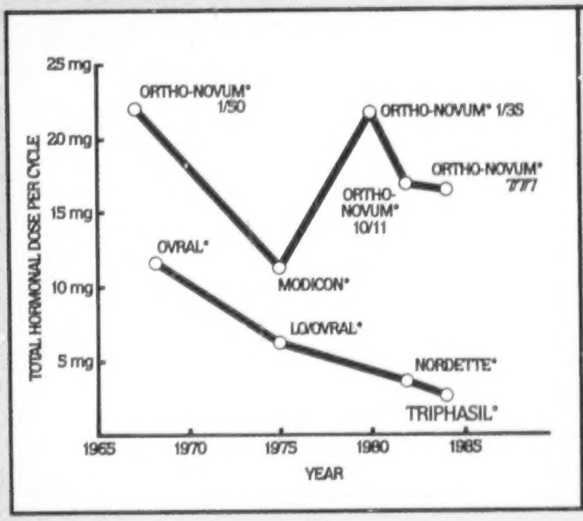
*Because of the poor survey response rate for private physicians, only the matched responses for consumers who could be linked with clinic providers were analyzed.

PROVEN IN WORLDWIDE CLINICAL EXPERIENCE...

ORAL CONTRACEPTION BEYOND TEXTBOOK STANDARDS

TRIPHASIL® continues the consistent Wyeth trend toward lower hormonal dosage in combination OCs



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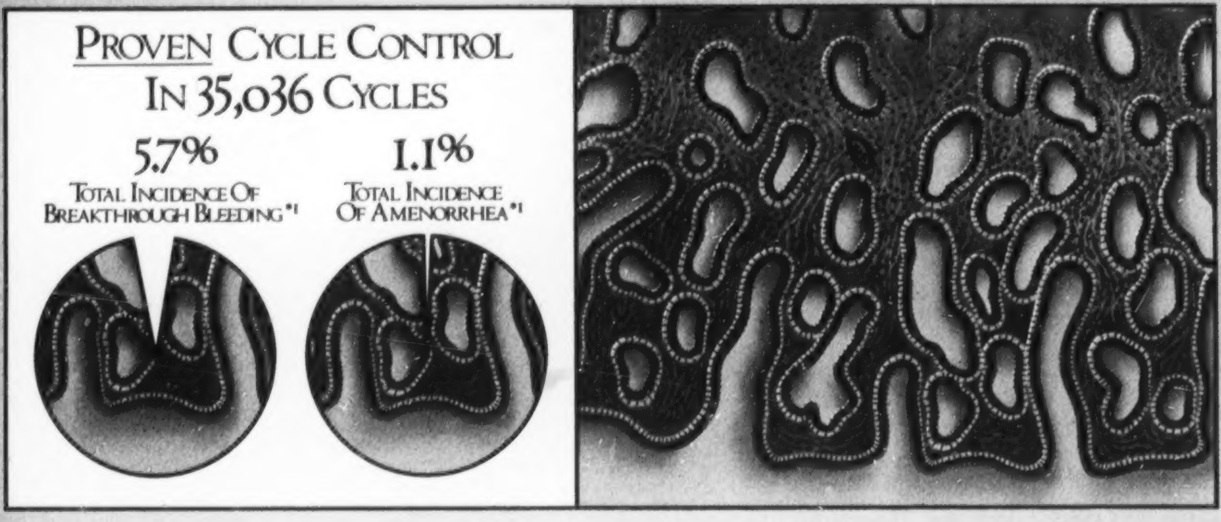
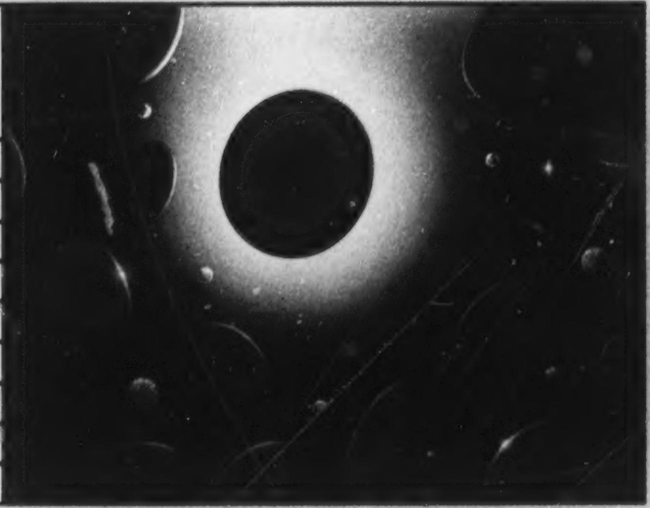
TRIPHASIL® reduces hormonal dose without compromising clinical performance[1]


PROVEN CYCLE CONTROL
IN 35,036 CYCLES
5.7%
TOTAL INCIDENCE OF BREAKTHROUGH BLEEDING*[1]
1.1%
TOTAL INCIDENCE OF AMENORRHEA*[1]

TRIPHASIL® demonstrates extensive documentation of minimal metabolic impact

INVESTIGATOR	MONTHS	TOTAL CHOLESTEROL	TRIGLYCERIDES	HDL CHOLESTEROL	LDL CHOLESTEROL
ELLSWORTH[2]	6	═	═	═	═
GASPARD[3]	6	═	═	═	═
HARVENGT[4]	6	═	═	═	═
SKOUBY[5]	6	═	▲	═	═
VERMEULEN[6]	6	═	═	═	═
MÄRZ[7]	3	═	▲	═	═
CULLBERG[8]	6	═	═	═	☐
SCHIJF[9]	6	═	═	═	☐
LARSSON-COHN[10]	6	═	▲	═	☐

▲ Increased ═ No Significant Change ☐ Not Tested



*Serious as well as minor adverse reactions have been reported following the use of all oral contraceptives.

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See important information on following page.

Triphasil®

Levonorgestrel
and ethinyl
estradiol
tablets—
Triphasic
regimen

Wyeth

21- and 28-day regimens

The textbook triphasic

IN BRIEF:

TRIPHASIL®—6 brown tablets containing 0.050 mg levonorgestrel with 0.030 mg ethinyl estradiol; 5 white tablets containing 0.075 mg levonorgestrel with 0.040 mg ethinyl estradiol; 10 light-yellow tablets containing 0.125 mg levonorgestrel with 0.030 mg ethinyl estradiol (7 light-green tablets containing inert ingredients are included in the 28-day regimen)—Triphasic regimen.

Indications and Usage—TRIPHASIL® is indicated for the prevention of pregnancy in women who elect to use oral contraceptives (OC's) as a method of contraception.

Contraindications—OC's should not be used in women with any of the following conditions: 1. Thrombophlebitis or thromboembolic disorders. 2. A past history of deep-vein thrombophlebitis or thromboembolic disorders. 3. Cerebral-vascular or coronary-artery disease. 4. Known or suspected carcinoma of the breast. 5. Known or suspected estrogen-dependent neoplasia. 6. Undiagnosed abnormal genital bleeding. 7. Known or suspected pregnancy (see Warning No. 5). 8. Benign or malignant liver tumor which developed during use of OC's or other estrogen-containing products.

Warnings

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions, including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems*—An increased risk of thromboembolic and thrombotic disease associated with use of OC's is well established. Three principal studies in Great Britain and 3 in the U.S. have demonstrated increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic. These studies estimate that users of OC's are 4 to 11 times more likely than nonusers to develop these diseases without evident cause.

CEREBROVASCULAR DISORDERS—In a collaborative American study of cerebrovascular disorders in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than nonusers and the risk of thrombotic stroke was 4 to 9.5 times greater in users than in nonusers.

MYOCARDIAL INFARCTION (MI)—An increased risk of MI associated with the use of OC's has been reported, confirming a previously suspected association. These studies, conducted in the UK, found, as expected, that the greater the number of underlying risk factors for coronary-artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of pre-eclamptic toxemia) the higher the risk of developing MI, regardless of whether the patient was an OC user or not. OC's, however, were found to be a clear additional risk factor. In terms of relative risk, it has been estimated that OC users who do not smoke (smoking is considered a major predisposing condition to MI) are about twice as likely to have a fatal MI as nonusers who do not smoke. OC users who are also smokers have about a 5-fold increased risk of fatal MI compared to users who do not smoke, but about a 10- to 12-fold increased risk compared to nonusers who do not smoke. Furthermore, amount of smoking is also an important factor. In determining importance of these relative risks, however, baseline rates for various age groups must be given serious consideration. Importance of other predisposing conditions mentioned above in determining relative and absolute risks has not as yet been quantified; quite likely the same synergistic action exists, but perhaps to a lesser extent.

RISK OF DOSE—In an analysis of data derived from several national adverse-reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to dose of estrogen in OC's. Preparations containing 100 mcg or more of estrogen were associated with higher risk of thromboembolism than those containing 50-80 mcg. Their analysis did suggest, however, that quantity of estrogen may not be the sole factor involved. This finding has been confirmed in the U.S.

ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES—A large prospective study carried out in the UK estimated the mortality rate per 100,000 women per year from diseases of the circulatory system for users and nonusers of OC's according to age, smoking habits, and duration of use. Overall excess death rate annually from circulatory diseases for OC users was estimated to be 20 per 100,000 (ages 15-34—5/100,000; ages 35-44—33/100,000; ages 45-49—140/100,000), risk being concentrated in older women, in those with long duration of use and in cigarette smokers. It was not possible, however, to examine interrelationships of age, smoking, and duration of use, nor to compare effects of continuous vs. intermittent use. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all these deaths occurred in women 35 or older. Until larger numbers of women under 35 with continuous use for 5 or more years are available, it is not possible to assess magnitude of relative risk for this younger group. Available data from a variety of sources have been analyzed to estimate risk of death associated with various methods of contraception. Estimates of risk of death for each method include combined risk of contraceptive method (e.g., thromboembolic and thrombotic disease in the case of OC's) plus risk attributable to pregnancy or abortion in event of method failure. This latter risk varies with effectiveness of method. The study concluded that mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of OC's in women over 40 who smoke. Lowest mortality is associated with condom or diaphragm backed up by early abortion. Risk of thromboembolic and thrombotic disease associated with OC's increases with age after about 30 and, for MI, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of pre-eclamptic toxemia, and especially cigarette smoking. Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, the drug should be discontinued immediately. A 4- to 6-fold increased risk of postsurgery thromboembolic complications has been reported in OC users. If feasible, OC's should be discontinued at least 4 weeks before surgery of a type associated with increased risk of thromboembolism or prolonged immobilization.

PERSISTENCE OF RISK OF VASCULAR DISORDERS—Findings from one study in Britain involving cerebrovascular disease and another in the U.S. concerning MI suggest an increased risk of these conditions in users of OC's persists after discontinuation of the OC's. In the British study, risk of cerebrovascular disease remained elevated in former OC users for at least 6 years after discontinuation. In the U.S. study, increased risk of MI persisted for at least 9 years in women 40 to 49 years old who had used OC's for 5 or more years. Findings in both studies require confirmation since they are inconsistent with other published information.

2. *Ocular Lesions*—There have been reports of neuro-ocular lesions such as optic neuritis or retinal thrombosis associated with use of OC's. Discontinue OC's if there is unexplained, sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal-vascular lesions, and institute appropriate diagnostic and therapeutic measures.

3. *Carcinoma*—Long-term continuous administration of either natural or synthetic estrogen in certain animal species increases frequency of carcinoma of the breast, cervix, vagina, and liver. Certain synthetic progestogens, none currently contained in OC's, have been noted to increase incidence of mammary nodules, benign and malignant, in dogs. In humans, 3 case-control studies have reported an increased risk of endometrial carcinoma associated with prolonged use of exogenous estrogen in postmenopausal women. One publication reported on the first 21 cases submitted by physicians to a registry of cases of adenocarcinoma of the endometrium in women under 40 on OC's. Of cases found in women without predisposing risk factors (e.g., irregular bleeding at the time OC's were first given, polycystic ovaries), nearly all occurred in women who had used a sequential OC. These are no longer marketed. No evidence has been reported suggesting increased risk of endometrial cancer in users of conventional combination or progestogen-only OC's. Several studies have found no increase in breast cancer in women taking OC's or estrogens. One study, however, while also noting no overall increased risk of breast cancer in women on OC's, found an excess risk in subgroups of OC users with documented benign breast disease. Reduced occurrence of benign breast tumors in users of OC's has been well documented. In summary, there is at present no confirmed evidence from human studies of increased risk of cancer associated with OC's. Close clinical surveillance of all women on OC's is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer or with breast nodules, fibrocystic disease, or abnormal mammograms should be monitored with particular care if they elect to use OC's.

4. *Hepatic Tumors*—Benign hepatic adenomas have been found to be associated with use of OC's. One study showed that OC's with high hormonal potency were associated with higher risk than lower potency OC's. Although benign, hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage. This has been reported in short-term as well as long-term users. Two studies relate risk with duration of use of OC's, the risk being much greater after 4 or more years' use. While hepatic adenoma is rare, it should be considered in women presenting abdominal pain and tenderness, abdominal mass or shock. A few cases of hepatocellular carcinoma have been reported in women on OC's. Relationship of these drugs to this type of malignancy is not known.

5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring*—Use of female sex hormones—both estrogenic and progestational agents—during early pregnancy may seriously damage the offspring. It has been shown that females exposed in utero to diethylstilbestrol, a nonsteroidal estrogen, have increased risk of developing in later life a form of vaginal or cervical cancer ordinarily extremely rare. This risk has been estimated to be of the order of 1 in 1,000 exposures or less. Although there is no evidence now that OC's further enhance risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use OC's. Furthermore, 30 to 90% of such exposed women have been found to have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether this condition is a precursor of vaginal malignancy. Male children so exposed may develop abnormalities of the urogenital tract. Although similar data are not available with use of other estrogens, it cannot be presumed they would not induce similar changes. An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with use of sex hormones, including OC's, in pregnancy. One case-control study estimated a 4.7-fold increase in risk of limb-reduction defects in infants exposed in utero to sex hormones (OC's, hormonal withdrawal tests for pregnancy, or attempted treatment for threatened abortion). Some exposures involved only a few days. Data suggest that risk of limb-reduction defects in exposed fetuses is somewhat less than 1 in 1,000 live births. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OC's. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OC's is unknown. It is recommended that, for any patient who has missed 2 consecutive periods, pregnancy should be ruled out before continuing OC's. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at time of first missed period, and further use of OC's should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus, and advisability of continuation of the pregnancy should be discussed. It is also recommended that women who discontinue OC's with intent of becoming pregnant use an alternate form of contraception for a period of time before attempting to conceive. Many clinicians recommend 3 months, although no precise information is available on which to base this. The administration of progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy.

6. *Gallbladder Disease*—Studies report increased risk of surgically confirmed gallbladder disease in users of OC's and estrogens. In one study, increased risk appeared after 2 years' use and doubled after 4 or 5 years' use. In one of the other studies, increased risk was apparent between 6 and 12 months' use.

7. *Carbohydrate and Lipid Metabolic Effects*—Decrease in glucose tolerance has been observed in a significant percentage of patients on OC's. For this reason, prediabetic and diabetic patients should be carefully observed while on OC's. Increases in triglycerides and total phospholipids have been observed in patients on OC's. Three studies were performed with Triphasil and no significant alterations in lipid metabolism were noted except for a slight increase in triglyceride levels in 1 study. Clinical significance of these findings remains to be defined.

8. *Elevated Blood Pressure*—Increase in blood pressure has been reported in patients on OC's. In some women, hypertension may occur within a few months of beginning OC's. In the 1st year of use, prevalence of women with hypertension is low in users and may be no higher than that of a comparable group of nonusers. Prevalence in users increases, however, with longer exposure, and in the 5th year of use is 2½ to 3 times the reported prevalence in the 1st year. Age is also strongly correlated with development of hypertension in OC users. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure on OC's. Hypertension that develops as a result of taking OC's usually returns to normal after discontinuing the drug.

9. *Headache*—Onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of OC's and evaluation of the cause.

10. *Bleeding Irregularities*—Breakthrough bleeding, spotting, and amenorrhea are frequent reasons for patients discontinuing OC's. In breakthrough bleeding, as in all cases of irregular vaginal bleeding, nonfunctional causes should be borne in mind. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, adequate diagnostic measures are indicated to rule out pregnancy or malignancy. If pathology has been excluded, time or change to another OC may solve the problem. Changing to an OC with a higher estrogen content, while potentially useful in minimizing menstrual irregularity, should be done only if necessary, since this may increase risk of thromboembolic disease. Women with past history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may have a tendency to remain anovulatory or to become amenorrheic after discontinuing OC's. Women with these preexisting problems should be advised of this possibility and encouraged to use other methods. Post-use anovulation, possibly prolonged, may also occur in women without previous irregularities.

11. *Ectopic Pregnancy*—Ectopic as well as intrauterine pregnancy may occur in contraceptive failures.

12. *Breast-feeding*—OC's given in the postpartum period may interfere with lactation and decrease quantity and quality of breast milk. Furthermore, a small fraction of the hormones in OC's has been identified in the milk of mothers on OC's; effects, if any, on the breast-fed child have not been determined. If feasible, defer OC's until infant has been weaned.

Precautions—GENERAL—1. A complete medical and family history should be taken prior to initiation of OC's. Pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Pap smear and relevant laboratory tests. As a general rule OC's should not be prescribed for longer than 1 year without another physical examination and Pap smear.

2. Under influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may increase in size.

3. Patients with history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree. Patients becoming significantly depressed while on OC's should stop OC's and use an alternate method to try to determine whether the symptom is drug-related.

4. OC's may cause some degree of fluid retention. They should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma, or cardiac or renal insufficiency.

5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while on OC's. If jaundice develops, OC's should be discontinued.

6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution.

7. OC users may have disturbances in normal tryptophan metabolism which may result in a relative pyridoxine deficiency. Clinical significance is undetermined.

8. Serum folate levels may be depressed by OC's. Since the pregnant woman is predisposed to development of folate deficiency and incidence of folate deficiency increases with increasing gestation, it is possible that if a woman becomes pregnant shortly after stopping OC's, she may have a greater chance of developing folate deficiency and complications attributed to this deficiency.

9. The pathologist should be advised of OC therapy when relevant specimens are submitted.

10. Certain endocrine- and liver-function tests and blood components may be affected by estrogen-containing OC's.

a. Increased sulfobromophthalein retention.

b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability.

c. Increased thyroid-binding globulin (TBG) leading to increased circulating total-thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered.

d. Decreased pregnanediol excretion.

e. Reduced response to metyrapone test.

Information for the Patient—See Patient Package Labeling.

Drug Interactions—Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, ampicillin and tetracycline.

Carcinogenesis—See Warnings section for information on carcinogenesis.

Pregnancy—Category X. See Contraindications, Warnings.

Nursing Mothers—See Warnings.

Adverse Reactions—An increased risk of these serious adverse reactions has been associated with use of OC's (see Warnings): thrombophlebitis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, cerebral hemorrhage, hypertension, gallbladder disease, benign hepatomas, congenital anomalies. There is evidence of an association between the following conditions and use of OC's although additional confirmatory studies are needed: mesenteric thrombosis, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions have been reported in patients on OC's and are believed to be drug-related. Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally. Gastrointestinal symptoms (such as abdominal cramps and bloating); breakthrough bleeding, spotting, change in menstrual flow; dysmenorrhea, amenorrhea during and after treatment, temporary infertility after discontinuance of treatment; edema; chloasma or melasma which may persist; breast changes: tenderness, enlargement, and secretion; change in weight (increase or decrease); change in cervical erosion and cervical secretion; possible diminution in lactation when given immediately postpartum; cholestatic jaundice; migraine; increase in size of uterine leiomyomata; rash (allergic); mental depression; reduced tolerance to carbohydrates; vaginal candidiasis; change in corneal curvature (steepening); intolerance to contact lenses. The following adverse reactions have been reported in users of OC's, and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, vaginitis, porphyria, hemolytic uremic syndrome.

Acute Overdose—Serious ill effects have not been reported following acute ingestion of large doses of OC's by young children. Overdosage may cause nausea, and withdrawal bleeding may occur in females.

Dosage and Administration—For maximum contraceptive effectiveness, Triphasil must be taken exactly as directed and at intervals not over 24 hours. (If Triphasil is first taken later than first day of first menstrual cycle of medication or postpartum, contraceptive reliance should not be placed on it until after the first 7 consecutive days of use. Possibility of ovulation and conception prior to initiation of medication should be considered.)

Any time patient misses 1 or 2 brown, white or light-yellow tablets, she should also use another contraceptive method until she has taken a tablet daily for 7 consecutive days.

For full details on dosage and administration see prescribing information in package insert.

Triphasil®
Levonorgestrel
and ethinyl
estradiol
tablets—
Triphasic
regimen

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Table 6. Percentage distribution of women by whether the responses they gave about the existence of particular services or policies at family planning clinics were the same as or different from the responses given by the clinics (N=470)

Service or policy	Same as clinic	Different from clinic	Don't know	Total
Has Spanish-speaking staff	86	5	9	100
Accepts Medicaid or Medi-Cal	77	7	16	100
Accommodates children	74	16	10	100
Is treated by MD	65	28	7	100
Has evening hours	60	29	11	100
Has weekend hours	60	23	17	100
Protects patient's privacy	59	39	2	100
Has sliding fees	59	19	22	100
Has same clinician each visit	55	35	10	100
Offers free services	55	21	24	100
Accepts walk-in patients	48	44	8	100
Has parental notification policy	38	19	43	100
No. of days for appointment	38	52	10	100

(Continued from page 97)

degree of agreement between the women and the clinics, these comparisons should not all be strictly interpreted as measures of accuracy, since to do so would suggest that women's responses are being measured against truly objective, factual standards. Although that may be the case for some clear-cut practices, such as the availability of evening and weekend sessions, it is less likely to be so for more subjective issues, such as the degree of privacy or length of time patients spend waiting.

In all, 73 clinics could be linked with the responses of 470 women. As is shown in Table 6, the three issues on which the consumers and clinics agreed most closely were the presence of Spanish-speaking staff members (86 percent agreement), the acceptance of Medicaid or Medi-Cal (77 percent) and the accommodation of children in the clinic (74 percent). Accuracy on these particular issues was independent of the women's having actual experience with the clinics, and it may reflect generally accepted beliefs about the kinds of services that clinics offer. There was less agreement about whether a clinic offered free services or charged patients according to their ability to pay (55–59 percent); indeed, almost one-quarter of the respondents did not know about these policies. The two issues about which the respondents were least accurate were parental notification and the acceptance of walk-in patients. As might be expected, 18–19-year-olds were somewhat more accurate than older women in their beliefs regarding the parental notification policies of providers (57 percent compared with 34 percent, not shown).

Not surprisingly, women who had been to a specific clinic for contraceptive services were more likely than those who had not to concur with the claims made by the clinics themselves, such as about the availability of evening and weekend hours, treatment by a medical doctor, adequate privacy and the treatment by the same clinician at each visit. However, policies on parental notification, the acceptance of walk-in patients and the availability of free services were misperceived equally by clinic users and nonusers.

By linking the women's responses with those of the providers, we also were able to examine whether the women had received the kinds of services that were most important to them. Among clinic patients who said that it was very important that a provider offer sliding fees, have a physician provide treatment, offer evening hours, accept walk-in patients or accommodate children, a majority had actually attended clinics that offered these services or policies. The most glaring discrepancy involved seeing the same clinician at each visit: Although 79 percent of the women who could be linked to clinics rated this as a very important aspect of service, only 35 percent had visited or were going to a provider where they saw the same practitioner each time. Thirty-five percent of the clinics to which the women could be linked said that their patients did not see the same clinician at each visit. Of those clinics where this was possible, 57 percent had other policies or practices, such as the absence of sliding fees, that could prevent many women from using the clinics' services.

Conclusions

The results of this study suggest that negative attitudes toward contraceptives, not negative attitudes toward medical family planning providers, are important determinants both of contraceptive nonuse and of reliance on nonprescription methods. Women's fears about the pill and their objections to barrier methods leave many with few contraceptive options besides sterilization. Furthermore, our findings indicate that even women who are using effective methods believe that there is a sizable chance of their becoming pregnant.

Negative attitudes and misinformation about contraception (especially about the most effective methods) must be resolved before a woman feels that she can approach a medical family planning provider. Of the small proportion of women who had never been to a physician or a clinic for family planning services, many cited method-related reasons. Clearly, favorable attitudes toward methods are a prerequisite for the use of birth control and, thus, for the use of a medical family planning provider.

Structural (provider-oriented) factors affecting the use of family planning services appear to enter the picture at a second point, once a woman has become receptive to the idea of using more effective methods. Women at this point may be kept from visiting the type of provider they would prefer, or from switching from one provider to another, because of cost, convenience and quality of care.

The primary barrier to clinic use is the apparent belief of many women that clinics do not offer personalized care and provide lower quality care than private physicians. Women attend clinics because of their low cost, our data indicate, even though they often feel that the care they will receive is of lower quality than the care a private physician would offer. The primary barriers to women's use of private physicians for family planning services are the high cost of such services and the fact that doctors are less likely than clinics to accept reimbursement from Medicaid or Medi-Cal.

Some clinic services and policies are unknown or misperceived by fairly large minorities of women, even among those who attend the clinics in question. If a clinic offers flexible fees, convenient hours and confidential services for teenagers, for example, it is unfortunate if a woman who might need these services does not know about them. On the other hand, if a clinic does not offer special services and a woman realizes this belatedly, her satisfaction with the clinic might be diminished. In the final analysis, no matter how attractive the facility or how convenient a provider's services and policies may be, few women will use the services if they don't know about them.

Since there is little hope that any new contraceptive methods will appear in the United States in the near future, it is crucial that every effort be made to inform women about the safety and effectiveness of the methods that are available. The fear of the pill is a real cause for concern: New information on the greater safety of the low-dose pill apparently has not been convincing enough to overcome the effects of the bad publicity received by the pill formulations of over a decade ago. More information and education about the benefits, risks and effectiveness of available methods, with special emphasis on the pill, is clearly needed.

In addition, we have seen that a number of concerns about the condom persist, and these need to be dispelled as well. Family planning providers may have to disseminate clearer information about condoms, both on how to use them most effectively and on how to ensure that their use does not interrupt sexual intercourse or interfere with the couple's enjoyment of it. Efforts to improve the condom's image are especially important given the growing societal concern over sexually transmitted diseases and acquired immune deficiency syndrome.

Clearly, then, if information about the pill and the condom is to be of help to all potential users, it must be directed not only at current family planning patients, but at potential clients as well, women and men alike. Both family planning providers and other organizations concerned with high rates of unintended pregnancy in the United States must undertake broader information and education efforts.

In the competition between providers to attract new patients and retain current ones, personalized, quality care and low cost are the most important factors on the minds of low-income women seeking contraceptive services. If clinics were to make a single structural change designed to better satisfy consumer preferences, that change would focus on the provision of more personalized care. It would be equally important that clinic providers get the word out to potential patients about such an improvement, as well as about the services and policies already in existence.

As noted before, key barriers to the use of private physicians for family planning services include high cost and the reduced likelihood that physicians will accept Medicaid or Medi-Cal. The possibility of securing improved reimbursement rates through Medicaid or Medi-Cal should be explored to make private doctors' services available to more low-income women.

Thus, encouraging more favorable attitudes toward contraceptive methods, as well as improving access to and knowledge of inexpensive, personalized family planning services, appear to be critical factors in fostering better contraceptive practice among low-income women in the United States. Going to a family planning provider is not a primary goal of women; it is only a necessary means to the end of obtaining reliable prescription contraceptives at an affordable price. Our results indicate that there is work to be done if more women are to practice contraception effectively.

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Staffing Patterns in Family Planning Clinics: Which Model Is Best?

By Laraine Winter and A. Susan Goldy

Background and Methodology

In recent years, the efficiency of health care organizations has increasingly come under scrutiny. Although the main reason for this scrutiny is undoubtedly economic—the skyrocketing cost of health care in the United States—the concern with efficiency has other than economic implications, in that it may also produce better patient care and improve the job satisfaction of health care workers. The past two decades or so have seen the emergence and growing importance of mid-level practitioners (nurse practitioners, nurse-midwives and physician assistants) in hospitals and other settings.[1] Publicly funded family planning clinics have led the way in this movement, expanding the role of the mid-level practitioner both to reduce costs during a period of continuing reductions in funding and to promote effective service delivery in order to improve client satisfaction and clinic continuation rates.

In this article, we examine data from 36 publicly funded family planning clinics in Pennsylvania to explore whether staffing patterns are associated with differences in clinic efficiency, cost-effectiveness and client satisfaction. The purpose of the research is to identify the features that constitute an optimally effective delivery system for the provision of basic family planning services.

The 36 clinics are funded by the Family Planning Council of Central Pennsylvania (FPCCP), which was chartered in 1973 as the grantee for federal, state and local funds for family planning services. The council, which serves a 24-county area, subcontracts with 19 agencies, most of them freestanding, community-based organizations; some of the agencies administer services in more than one site.* Together, the clinics funded through the FPCCP serve a population of approximately 50,000

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*In all, the council oversees 41 clinics. Five of those clinics were excluded from the study because they do not provide reproductive health services exclusively.

women per year. All the facilities offer reproductive health exams (including cancer screening), contraceptive information and supplies, testing and treatment for sexually transmitted diseases, and pregnancy testing. Some clinics provide, in addition, prenatal care, services under the Women, Infants and Children Supplemental Food Program (WIC), genetic screening and referral, infertility services, parent education programs, community education, family planning services for males, and training in natural family planning.

The clinics differ widely in size, degree of task specialization and utilization of mid-level practitioners. To develop an objective basis for classifying the facilities, we sent the executive director of each clinic a questionnaire asking him or her to specify the number of staff members clients see at their initial and annual visits.

To measure the efficiency of the clinics' operation, we used data derived from previous clinic evaluations. Computerized patient-flow analyses (PFAs) had been conducted in a number of the clinics at least once since 1981. These analyses are time-and-motion studies, performed during a clinic session, that yield a picture of staff activity and patient movement by relating characteristics of the clinic setting, staff and client population to the amount of time each staff member spends with each client.[2] Specifically, the PFAs provide information about the number of stops each clinic visit entails (for example, stops with a receptionist, registered nurse, physician and exit interviewer), the amount of time that clients spend waiting for services, and the proportion of their time that staff spend in contact with clients. The number of stops was regarded as a reflection of a clinic's staffing pattern and degree of task specialization; patient waiting time and staff time spent in contact with patients were considered measures of clinic performance, since the more efficiently a clinic functions, the less time clients should spend waiting and the greater proportion of time staff members should spend with clients.[3]

In addition to the patient-flow analyses, the FPCCP had conducted medical and performance evaluations in 34 clinics; these evaluations provide data about the amount of time clients wait between arrival at the clinic and receipt of services, the total time clients spend in the clinic and continuation rates among clients. Complete data are available for 26 clinics, and partial data are available for eight.

Since salaries account for most of the total expense of running a clinic,[4] we developed a cost-effectiveness measure based on this single aspect of the cost of providing services. For each clinic, we computed the weekly salary cost by multiplying the number of hours each staff member worked during the week by his or her hourly wage. (The data were provided by the clinic directors; salary figures, which excluded fringe benefits, and numbers of hours worked were averaged over 1986.) The result was then divided by the average number of client visits made to the clinic per week, as recorded in in-house reports.

Because the ultimate goal of our research was to identify the factors that contribute to effective service provision, we tried to examine as many parameters of service delivery as possible. One variable we did not examine was administrative or management structure, even though management efficiency presumably varies in different facilities and contributes to clinic efficiency. We believe that if management efficiency varies systematically with staffing pattern, its effects should be represented through the other measures of clinic efficiency. If, on the other hand, management efficiency varies randomly with staffing pattern, it should not contribute to differences in overall efficiency between clinics with different staffing patterns; in other words, there should be as many inefficiently managed clinics in one staffing category as in another. Thus, we believe that the exclusion of this variable from the analysis does not measurably affect its results.

To gauge clients' satisfaction with their clinic experience, we sent 40 questionnaires to each of the 36 facilities. For approximately one month, staff gave the questionnaires to female patients at the conclusion of their clinic visits. At the end of that period, the 703 forms that had been completed were mailed back to the FPCCP. (Many of the forms were not returned because some of the clinics were slow in distributing them to clients, some gave them to every other patient, and some held a limited number of clinic sessions each week. None of the clients who received questionnaires refused to participate in the survey.)*

The two-page questionnaire asked clients to evaluate seven aspects of their clinic experience by choosing a number on an 11-point scale (from 0 to 10) for each item: (1) how comfortable or relaxed they felt (the continuum ranged from "not at all comfortable" to "very comfortable"); (2) how sensitive the clinic staff was to their needs; (3) how efficient the service was; (4) how thoroughly contraceptive information was provided; (5) how thoroughly pregnancy options (if applicable) were explained; (6) how well the clients liked the clinicians; and (7) how they would evaluate their clinic experience overall ("very negative"/"very positive"). On the reverse side of the questionnaire were 11 additional questions, including some asking whether the clients preferred a male or female clinician, whether they preferred a particular type of clinician (doctor or nurse practitioner), whether they felt that they had had to wait too long for services, and whether they intended to return to the clinic. The questionnaire also asked about the clients' age, religious background and race. Finally, clients were asked to write comments about their clinic experience.

In the analysis that follows, all the measures of efficiency relating to the activities of staff members, are based only on personnel involved in the provision of basic family planning services during clients' initial or annual visits. Basic services are defined as the medical history-taking, education and counseling, medical examinations, lab

Table 1. Classification of clinics by personnel seen for basic family planning services at clients' initial or annual clinic visits, Family Planning Council of Central Pennsylvania

Staff member	Model			
	1 (N= 12)	2 (N= 13)	3 (N= 4)	4 (N= 7)
Total no. of staff members seen	**2**	**3**	**4**	**≥5**
Physician			One of these	
Mid-level practitioner*	√	√		
Receptionist	One of these	√	√	√
Counselor/ educator		One of these	Any two of these	At least one of these
Lab tecnician/ medical technologist				
Health service worker/nurse's aide				
RN or LPN				√
Exit interviewer/ financial clerk				√

*Generally a nurse practitioner but in some clinics a nurse-midwive or physician assistant.

Note: RN=registered nurse; LPN=licensed practical nurse.

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*Ninety percent of the respondents were aged 29 or younger, and 35 percent were younger than 20. Ninety percent were white; another five percent, black; and one percent, Hispanic. About 20 percent were Catholic.

Table 2. Measures of efficiency in providing basic family planning services, 36 family planning clinics, by clinic model

Measure	Model			
	1	2	3	4
Mean total time in clinic (min.)*	50.1 (6)	69.4 (9)	64.4 (2)	64.3 (2)
Mean wait after reception (min.)*	15.8 (6)	20.6 (9)	16.0 (2)	17.2 (2)
Mean wait between stops (min.)†	13.3 (3)	23.8 (5)	27.3 (2)	31.0 (3)
Mean no. of stops†	4.5 (3)	6.2 (5)	u (0)	7.5 (3)
Mean staff time with clients (%)†	47.5 (3)	46.0 (5)	37.8 (2)	37.0 (3)
Client 1-yr. continuation rate (%)‡	62.7 (10)	63.7 (13)	62.4 (3)	65.5 (7)
Mean no. of clients per day†	25 (3)	21 (5)	29 (2)	36 (3)
Cost-effectiveness ($)	11.90 (12)	25.19 (13)	26.80 (4)	23.94 (7)

*Data from medical evaluations.

†Data from patient-flow analyses (PFAs).

‡Data from performance evaluations.

Notes: Not all clinics could provide data for all measures; numbers providing data are shown in parentheses; u=unavailable.

work and paperwork necessary for the provision of contraceptive methods. Thus, specialized clinic personnel such as nutritionists associated with the WIC program or community educators are not considered part of the staffing pattern unless they participate in the provision of basic family planning services as well.

Staffing Patterns and Efficiency

The data from the survey of clinic directors show that the 36 facilities are classifiable into one of four categories of clinic organization (see Table 1, page 103). We have defined as model 1 clinics those facilities in which patients see only two staff members during their initial or annual visits—a mid-level practitioner (usually a nurse practitioner) and either a receptionist or a counselor. The two workers each perform a variety of functions. Twelve of the study clinics fall into this category.

Patients who attend model 2 clinics see three staff members: a mid-level practitioner, a receptionist and one other person, who may be a counselor, a lab technician, a health care worker or a registered or licensed practical nurse. In model 3 clinics, patients receive basic services from four staff members—a physician or mid-level practitioner, a receptionist and two other people. Thirteen clinics conform to the model 2 pattern, and four clinics, to the model 3 pattern.

Model 4 facilities, in contrast, are those in which patients are always seen by a physician (who performs the pelvic exam) and by at least four other staff members. Seven clinics are of the model 4 type.

The numbers of staff members on which these models are based, however, do not represent the *total* number of personnel employed in the four types of clinics, because the classification system does not include workers who provide special services, such as genetic screening. Model 1 clinics were found to employ a mean of 5.5 staff members overall; model 2, a mean of 8.4; model 3 clinics, 11.0; and model 4 clinics, 8.8. Thus, the average model 4 clinic employs a larger staff than does the average model 1 clinic, but overall staff size does not vary systematically across the four models.

To ascertain whether the four staffing models described above might reflect differences between clinics in the range of special services provided (such as genetic screening), we tallied the number of medical services offered by all of the clinics within each model and then computed the mean for that model. We found that the number of services offered does not differ either substantially or consistently across the four categories: Model 1 clinics offer a mean of 5.5 medical services; model 2 offer 4.5; model 3 provide 6.3; and model 4, 5.7.

We also found no association between staffing pattern and clinic location: Roughly as many model 1 clinics as model 4 clinics are located in urban areas.

Table 2 presents the measures of efficiency and cost-effectiveness computed for each of the four clinic models. As the first row of the table indicates, the mean total time a patient spends in the clinic is shorter in model 1 facilities than it is in any of the other three models (50 minutes compared with 64–69 minutes). The mean waiting time after arrival varies little among the models (16–21 minutes); but the mean waiting time between stops—that is, between sessions with individual staff members—shows a steady increase, from 13 minutes in model 1 clinics to 31 minutes in model 4 clinics. And just as clients who attend model 1 clinics spend less time waiting, the staff of those clinics spend more time in contact with the clients: 48 percent of their time during a given day, compared with the 37 percent that the staff of models 3 and 4 facilities spend.

As would be expected from the number of employees providing basic services, visits to model 1 clinics entail fewer stops with staff members (a mean of 4.5) than do visits to clinics of the model 2 or model 4 variety (6.2 and 7.5 stops, respectively). (No data on number of stops are available from the model 3 clinics because those facilities used a version of the PFA that did not record that piece of information.)

One-year continuation rates among clients—varying only from 62 percent to 66 percent—show no relationship with clinic staffing patterns.

The last measure of efficiency presented in Table 2, the cost-effectiveness estimate, indicates that clinics of the model 1 type provide services at a cost less than half that incurred by the other staffing models: Model 1 facilities spend only $12 per visit to provide basic family planning services, whereas the other clinic types spend $24–$27 per visit.

Client Satisfaction

Table 3 shows the mean responses given to the seven questions clients were asked about their clinic experience. Correlations between all pairs of questions were found to be significant and generally quite high (except in the case of the question on counseling about pregnancy options, for which the sample was considerably smaller).* Therefore, a composite rating was computed representing the mean score for the seven questions. For each question and for the composite, a comparison of the four clinic models was performed using a one-way analysis of variance (ANOVA).

Responses to four of the questions differed significantly across models. Those questions dealt with staff sensitivity (item 2), clinic efficiency (item 3), liking for clinician (item 6) and overall clinic experience (item 7). The results of significance tests† performed on all pairs of means for each of the four questions and for the composite item indicate that model 4 clinics were rated significantly less favorably than the other clinics, and that models 1–3 did not differ significantly from one another in the ratings clients assigned to them.‡

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*In all cases except the one cited, $r>0.28$ and $p<0.0001$.

†Protected t-tests. (See: J. Cohen and P. Cohen, *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, Lawrence Erlbaum, Hillsdale, N. J., 1975.)

‡Model 1 clinics scored higher than model 4 clinics in staff sensitivity (t=2.53, p=0.012), clinic efficiency (t=3.51, p=0.005) and liking for clinician (t=3.01, p=0.021). Model 2 clinics scored higher than model 4 in efficiency (t=2.81, p=0.005) and liking for clinician (t=2.22, p=0.027). Model 3 clinics did better than model 4 clinics on sensitivity (t=2.26, p=0.025), liking for clinician (t=2.16, p=0.015) and overall clinic experience (t=2.35, p=0.009). On the composite rating, model 1 and model 3 facilities received higher scores than did model 4 clinics (t=2.52, p=0.012 and t=2.39, p=0.018, respectively).

In Table 4, we present the clients' responses to the questions on preferred gender and type of clinician, length of clinic wait and intention to return to the clinic. About 80 percent of the clients said that given a choice between a male and a female clinician, they would prefer a female; only six percent said they would prefer a male. Forty-five percent would rather see a physician than another type of clinician; 34 percent would rather see a nurse practitioner. Only 10 percent of respondents thought that the waiting time in the clinic was too long. Virtually all the respondents—98 percent—said that they intended to return to the clinic.

Answers to two of the questions—on preference for gender and type of clinician—differed significantly by clinic model. In both cases, the results reflected clients' actual clinic experience: The clients of model 4 clinics, where the clinicians are usually male and are always doctors, were more likely than other clients to say they preferred male over female clinicians (19 percent compared with 1–6 percent), and doctors over other types of clinicians (81 percent vs. 34–44 percent). (There are no male nurse practitioners in the study clinics.)

As noted, 98 percent of the respondents said that they intended to continue attending the clinic. However, we know from the performance evaluations that only about 63 percent of clinic patients in central Pennsylvania do in fact continue. Although reasons other than dissatisfaction (such as pregnancy, relocation or a switch to a private physician) may account for clinic discontinuation, the discrepancy between 98 percent and 63 percent suggests that some of the clients' responses may be substantially biased toward the positive. Such a bias may also underlie the extremely high ratings the women gave the clinics on the seven measures presented in Table 3; however, if those ratings are inflated, the inflation is uniform across clinic models, and differences between the models are statistically significant and consistent.

Sources of Difference

One difference between model 4 clinics and the other types is that in the former, the clinician is always a doctor and is generally a male. From Table 4 we know that the overwhelming majority of clients would prefer to see a female clinician. To what extent does the preference for the first three clinic models seen in Table 3 reflect a preference for a female clinician?

We compared the responses to the seven scale items given by clients who had seen male clinicians (physicians only) with the responses given by clients who had seen female clinicians (physicians, nurse practitioners or physician assistants). The latter clients gave significantly higher scores than did the former on three items: staff sensitivity (mean scores were 9.50 and 9.22), clinic efficiency (9.56 vs. 9.31) and

Table 3. Mean responses (on a scale of 0–10) given by clients to seven clinic evaluation questions, by clinic model

Model	Client comfort (1)	Staff sensitivity (2)	Clinic efficiency (3)	Contraceptive information (4)	Pregnancy information (5)	Liking for clinician (6)	Overall experience (7)	Composite
1								
Score	9.09	9.49	9.59	9.67	9.57	9.75	9.57	9.53
(N)	(278)	(278)	(278)	(246)	(46)	(278)	(278)	(278)
2								
Score	9.12	9.39	9.58	9.66	9.00	9.71	9.52	9.47
(N)	(223)	(220)	(222)	(198)	(54)	(221)	(222)	(230)
3								
Score	9.29	9.63	9.53	9.74	9.44	9.78	9.73	9.61
(N)	(73)	(73)	(73)	(69)	(9)	(73)	(73)	(73)
4								
Score	9.06	9.14	9.19	9.74	9.17	9.48	9.38	9.32
(N)	(108)	(108)	(107)	(93)	(24)	(107)	(108)	(108)
F	<1.00	2.95	4.15	<1.00	<1.00	4.04	2.26	2.86
p	0.731	0.032	0.006	0.803	0.477	0.007	0.080	0.036

Table 4. Percentage distribution of clinic clients, by responses to four clinic evaluation questions, according to clinic model

Question	Model				
	All	1	2	3	4
Prefer male or female clinician?	(N= 661)	(N= 263)	(N= 226)	(N= 70)	(N= 102)
Male	5.7	1.1	5.3	5.7	18.6
Female	79.3	88.6	81.9	77.1	51.0
Don't care	15.0	10.3	12.8	17.1	30.4
Chi-square=75.23, df=9, p<0.001					
Prefer one type of clinician?	(N= 635)	(N= 250)	(N= 213)	(N= 70)	(N= 102)
Doctor	45.4	33.6	42.3	44.3	81.4
Nurse practitioner	33.7	48.4	28.2	37.1	6.9
Physician assistant	8.7	4.0	18.8	1.4	3.9
Nurse-midwife	3.0	3.6	4.2	0.0	1.0
Don't care	9.3	10.4	6.6	17.1	6.9
Chi-square=127.77, df=12, p<0.001					
Wait too long?	(N= 663)	(N= 265)	(N= 223)	(N= 72)	(N= 103)
Yes	10.1	7.5	9.0	12.5	17.5
No	89.9	92.5	91.0	87.5	82.5
Chi-square=10.34, df=6, p=0.11					
Intend to return to clinic?	(N= 668)	(N= 267)	(N= 226)	(N= 72)	(N= 103)
Yes	97.8	98.5	96.5	98.6	98.1
No	0.9	0.7	1.8	0.0	0.0
Undecided	1.3	0.7	1.8	1.4	1.9
Chi-square=4.89, df=6, p=0.56					
Total	100.0	100.0	100.0	100.0	100.0

liking for clinician (9.73 and 9.52).* We also compared the ratings in the case of male doctors and female doctors only, eliminating other kinds of clinicians. The results closely resemble those found in the previous comparison, although samples were much smaller: Clients who had seen female physicians gave significantly higher ratings for staff sensitivity (9.47 vs. 9.14), clinic efficiency (9.58 vs. 9.34) and liking for clinician (9.71 vs. 9.54).† Thus, part of the reason why the model 4 clinics received less favorable ratings may be that the clinicians in this model are usually male. It was not possible to assess this hypothesis statistically, because in our data clinician gender is almost completely correlated with staffing model.

We were also interested in the pattern the ratings would show when responses to each of the seven questions were analyzed according to age of the respondent. We therefore divided the sample into two groups—women younger than 20 and those 20 and older. The responses to the first question, on how comfortable or relaxed the client had felt, showed the greatest age difference: Not surprisingly, teenagers gave a significantly lower rating to that aspect of their clinic experience than did adults (a mean score of 8.78, compared with 9.30). Teenagers rated the clinic staff as slightly less sensitive to their needs than did adults (9.30 compared with 9.48); they rated their overall clinic experience somewhat less positively than did older clients (9.44 vs. 9.61).‡

To examine the data for any interaction between age (teenagers vs. older clients) and clinic model, we computed ANOVAs for each of the seven questions by age-group. The resulting pattern of effects was consistent with that yielded by the original ANOVAs, but no age interaction appeared: The preference for facilities in which female clinicians always or usually conduct the medical exams (i.e., for models 1–3) was no more typical of teenagers than of older clients. We also compared the responses that adolescents and older women gave to the questions on preference for type and gender of clinician and on intention to return to the clinic. The chi-squares for the first two items were significant—indicating that preferences for a female clinician and for a doctor were stronger in the older group—but both groups clearly preferred seeing a female and a physician for family planning services. Thus, there were no striking age differences.

Conclusions

In this exploratory study of the effects of staffing patterns on clinic efficiency and client satisfaction, we sought to take into account as many parameters of clinic performance as possible, in order to identify the most salient costs and benefits. There is little practical advantage in discovering, for example, that clients prefer type A clinics to type B if the costs of running the former are prohibitive. Similarly, there is little utility in knowing that type A clinics are far more cost-effective than type B if the women who attend type A clinics dislike them and do not return as often as do women who go to type B facilities.

The results of the study suggest that staffing arrangements for the provision of basic family planning services influence clinic effectiveness. The type of clinic we have called model 1—sparely staffed, with each employee performing multiple tasks—appears to function more efficiently than do the other three types, as evidenced by measures of client waiting time, number of stops with different staff members and cost-effectiveness. This last measure, although relatively crude, indicates that model 1 clinics are substantially less expensive to run than are other types of facilities. At the same time, model 1 clinics do not appear to sacrifice client satisfaction: In the clients' evaluations of their clinic experience, model 4 facilities were the only ones rated significantly less favorably, both overall and in several specific respects. And clients of model 1 clinics were as likely to continue their clinic attendance as were clients of the other type of facilities. The evidence from this study suggests that the simpler a clinic's organization, the more efficiently it operates; future research should explore the ways in which such variables as staff size and task specialization mediate this effect.

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*On staff sensitivity, the t-test result was t=3.26, p=0.009; on clinic efficiency, it was t=2.43, p<0.015; and on liking for clinician, t=3.04, p=0.010.

†On staff sensitivity, the t-test result was t=2.22, p=0.027; on clinic efficiency, it was t=1.93, p=0.065; and on liking for clinician, t=1.85, p=0.066.

‡On comfortableness, the t-test result was t=4.71, p<0.001; on staff sensitivity, it was t=1.77, p=0.082; and on overall clinic experience, t=2.43, p<0.019.

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Teenage Fathers: Working with the Neglected Partner In Adolescent Childbearing

By Joelle Hevesi Sander and Jacqueline L. Rosen

Summary

The Teen Father Collaboration, a two-year national research and demonstration project launched in 1983, was designed to determine the most effective ways to assist teenage fathers in contributing to their children's social, emotional and financial well-being. Eight social service agencies from around the country provided nearly 400 young fathers and prospective fathers—most 17 or 18 years of age—with a variety of services, including counseling, educational assistance and job training.

Many young fathers wanted to contribute financially to their children's upbringing but had only a limited ability to do so because they were unemployed or needed job training. By the end of the project, 56 previously unemployed participants had taken part-time jobs, and 92 participants had found full-time employment; nearly half of the nongraduates who were not enrolled in school when they entered the program had returned to school, had obtained their GEDs or had enrolled in GED classes by the time the Collabortion ended.

An aggressive approach to recruitment and a good knowledge of the community were considered to have been crucial to the success of the programs: Staff members had to be able to go into the community and reach young men on a one-to-one basis. The experiences of the agencies indicate that a man in his 20s or 30s from the same ethnic and cultural background as the teenage clients usually succeeded best as a counselor.

The study also shows that ambivalence on the part of a cooperating agency was probably the most important factor hindering the efforts of the Collaboration. Where top-level administrative support was lacking, the program was largely ineffectual. Nonetheless, the Teen Father Collaboration may have helped, at least partially, to erase the stereotype that all teenage fathers neglect their parental responsibilities.

Introduction

Although U.S. health, social service, educational and legal systems have long recognized the serious needs of adolescent mothers and their babies, teenage fathers have not always been afforded the same kind of concern. Because of their youth, their lack of skills and resources and the fact that they usually are not married to the mothers of their children,[1] teenage fathers have often been treated as outcasts by social service providers. The legal system has often taken a negative view of unwed teenage fathers as well, treating them as if they were "walking wallets" who should provide child support even though their employment opportunities are mostly meager and erratic.[2]

The lack of services for teenage fathers is particularly distressing in light of studies suggesting that an adolescent father's involvement in his partner's pregnancy increases the young mother's sense of confidence in her nurturing skills,[3] heightens her sense of security after delivery[4] and raises the father's self-esteem.[5] Moreover, research also indicates that children from homes in which the father is absent score lower on measures of trust, self-esteem and socialization than do children who live with their fathers,[6] a finding that underscores the need to help fathers remain involved in their children's lives whenever appropriate. Several other studies have shown that although inner-city teenage men generally have few economic resources, many contribute financially to support the children they have fathered.[7]

The Teen Father Collaboration, launched in 1983, was a two-year national research and demonstration project directed and documented by Bank Street College of Education. It was designed to determine the most effective ways to assist teenage fathers in contributing to their children's social, emotional and financial well-being. Eight local agencies across the country participated in the project.* (All but one of these agencies had well-established programs for teenage mothers.) The eight participating agencies did not all offer the same services; some provided many services on-site, while others primarily referred teenagers to organizations in the community that could help them meet particular needs. An important aspect of the project was the collaboration between the agencies: Their staff members communicated regularly and held an annual conference at which they discussed what had worked and what had not.

The eight project areas differed greatly in the racial and ethnic characteristics of their populations. Some areas were primarily black or Hispanic, others were mainly white or mixed, and one was mostly native American. Most of the agencies elected to serve men who were 19 or younger; a few programs included somewhat older men. Some of the organizations had large staffs, but others relied on the efforts of just one or two people. Typically, the agencies' programs for teenage fathers included classes in parenting, training in vocational and job placement skills, tutoring and educational

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*The agencies were in Bridgeport, Conn.; Louisville, Ky.; Minneapolis, Minn.; Philadelphia, Pa.; Portland, Oreg.; Poughkeepsie, N.Y.; St. Paul, Minn.; and San Francisco, Calif.

assistance, individual and group counseling and family planning services. The eight program sites served a total of nearly 400 young fathers and prospective fathers; most were first-time fathers, and the majority were 17 and 18 years of age.

However, the Teen Father Collaboration should be considered an exploration of possibilities, and cannot be evaluated simply in terms of the number of people who were served. Local agencies were not expected to implement and test any particular model of service delivery, nor were any teenage men who entered the project placed into some sort of control group that received fewer services. Instead, each agency had to struggle to understand and meet the needs of its own local population of teenage fathers. As a result, it is difficult to pinpoint the ways in which specific components of an agency's program influenced the lives of the young men. In addition, it should be borne in mind that the young men who took part in the Collaboration were entirely self-selected; in the absence of information as to how these teenagers differed from the young men who did not participate, we can draw no conclusions about teenage fathers in general.

Finally, problems of interpreting the impact of the project are compounded by the high rate of attrition among the participants. Very few participants ever informed program staff before they left, so it was rare that outcome data could be collected prior to their departure. Furthermore, it was often impossible to contact the participants by telephone or mail.

Needs of Teenage Fathers

The organizations that participated in the Teen Father Collaboration were well aware, even before the project began, that teenage fathers were a group confronted with a multitude of problems—poverty, unemployment and lack of skills and education. They also knew that these young men often suffer from low self-esteem as a result of their inability to find work and their dismal outlook for the future. Thus, it was evident from the beginning both that a wide variety of services would be required to meet the needs of these teenagers and that participating organizations would have to identify appropriate off-site resources to which the young men could be referred if an agency itself did not offer a particular service.

Almost 85 percent of the nearly 400 young men for whom data were available made use of at least two program-related services, and three-quarters used three or more. Nearly all of the young men availed themselves of individual counseling, in which they discussed subjects such as their responsibilities as fathers, their relationships with their partners and their attitudes toward family planning.

From the start, the availability of vocational services was one of the main attractions of the project. Of the 395 young men who participated in the project, only 138 (35 percent) were employed at the time they entered the program, and more than half of these worked only part-time. Not surprisingly, most of the young men who were working held entry-level jobs that required little specialized training: Many worked as janitors or maintenance men, or in fast food restaurants, hotels, car washes or factories. Staff members of either the participating agency or a community vocational program coached the project participants in writing resumes, interviewing for jobs, scanning want ads and otherwise tracking down job openings. By the end of the project, 56 previously unemployed participants (14 percent of all the young men) had found part-time jobs, and 92 participants (23 percent) had found full-time employment.

Soon after enrolling in the program, many of the teenagers revealed the need for other services, especially personal counseling to address their lack of confidence as fathers, partners, students and job seekers. Other issues came to the fore as well. For example, alienation from their peers and feelings of isolation troubled many of the young men. This particular problem was dealt with both in individual and in group counseling. One young father, referring to his experience with the other teenage fathers, said: "What probably got me through the whole thing was knowing that other guys were in the same boat." Another said that at the time he heard about the program, he was "desperate for any kind of help—any kind of support I could get."

Counseling was also offered to couples at most of the program sites, and these sessions provided counselors with an opportunity to talk to both partners about their relationship, their joint responsibilities and their contraceptive use. It was during this type of counseling that the issue of domestic violence was most likely to emerge; in such cases, the counselor could help mediate the underlying conflict. The counselors also visited the teenage parents' homes, which allowed them to observe the child and to determine, for example, whether it was being abused or neglected.

Many of the young men said that they wanted to become the "good father" that they themselves had never had, by giving their partners support and encouragement and helping with child care. As one participant said, "I want to be a better father than my father was to me. I want something different for my child from what I have." Agencies ran workshops on child development and offered parenting classes in which counselors gave lessons in diapering, feeding and bathing infants. The young men were instructed in the prenatal and postnatal care of their partners, including the importance for pregnant women of having a good diet and avoiding the use of tobacco, alcohol and other drugs. Counselors also helped the young men deal with fears that caring for children was a "sissy" thing to do.

Educational services were also an integral part of the program. A majority of the teenage fathers had dropped out of school between the ninth and 11th grades. Their general sense of failure was compounded by poor academic performance, and some of the young men were so far below grade level that they needed tutoring in basic skills. In a few cases, counselors had considerable difficulty finding educational programs appropriate for their clients. Teenage fathers with better academic skills were encouraged either to return to school or to obtain their General Equivalency Diploma (GED). By the end of the project, nearly half of the 155 nongraduates who had not been enrolled in school upon entering the program had returned to school, had obtained their GEDs or had enrolled in GED classes. Many young fathers needed a great deal of support in such efforts, especially when their urgent desire to support their child blinded them to the importance of completing their education and eventually securing less-menial work. One counselor said that he was "concerned about seeing lots of guys who are really committed to their children, who just drop out of school and take dead-end jobs—so that they can support [their children] right now—without seeing the long-term consequences."

Finally, some agencies helped the teenage fathers establish legal paternity. In one agency, counselors accompanied the young men to the district attorney's office, where they were instructed in the difficult and often humiliating process of becoming a legal parent. (For example, the young men were asked many intrusive questions about their sex lives and details of how and why their partners became pregnant.)

Recruitment Strategies

Every organization participating in the Collaboration had to face the key issue of recruitment. Almost all of the agencies initially were skeptical about the possibilities of reaching teenage men. However, over time, all the agencies developed their own ways of attracting young men to the program. The most important on-site recruitment resource was undoubtedly the young father's female partner. In seven of the eight organizations, young women who were already clients were encouraged by the staff to tell their partners that there was a program specifically for them. For the most part, the young women became strong advocates for the young men's program, coaxing—and, according to some participants, even "nagging"—their partners to join. Because so many of the young mothers felt overwhelmed by the experience of pregnancy and birth, they were often pleased and relieved that their partners were being taught how to take on and share some of the childrearing responsibility.

Sometimes a young woman's partner accompanied her to the agency; in such cases, a counselor stationed near the waiting room would seek the young man out, describe the program to him and urge him to join. This immediate, on-the-spot contact often was instrumental in reaching the teenage men. One young man who had accompanied his partner to the prenatal clinic said: "I only came to the clinic to hear the baby's heartbeat. Then one day a social worker stopped me and told me about the program. Before I had a chance to say no, a counselor who was sitting right next door introduced himself to me and asked if he could tell me about the program. I have to be honest with you, if my counselor hadn't been there right at that moment, I might have told the social worker I'd come back, but I wouldn't have."

Receptionists at some agencies asked young women calling to make an appointment to bring in their partners (if relations between them were amicable). When a partner did not come in with the young woman, she was asked if there was any way for a counselor to contact him directly. If so, then someone either called him or visited his home in order to discuss the program.

However, only slightly more than one-third of the young men who participated in the program were recruited through their female partners. Approximately two-thirds were recruited into the program through off-site strategies devised by the agencies. Unlike young women, young men often do not come into social programs on their own; rather, they require a great deal of encouragement before they will investigate or utilize available services. Therefore, an aggressive approach to recruitment and a good knowledge of the community were crucial. Successful off-site strategies often depended on a staff member's ability to go into the community and reach young men on a one-to-one basis. Counselors also visited high schools, giving presentations about the project to students and staff and making contact with school guidance counselors for potential referrals. In addition, project staffers contacted counselors at vocational training programs, GED programs and recreational centers. Several project staff members recruited young men on basketball courts, in poolrooms and on street corners. The project itself also became known by word of mouth, after counselors had established themselves in a neighborhood. In time, many young men said that they had come into the program because their friends had sent them.

Agencies also used the media to reach teenage men. Television, radio and local newspaper coverage helped make the community aware of the various services available through the project, and these messages sometimes led to referrals from other agencies not directly participating in the project. In addition, some teenagers became strong program advocates themselves, speaking on radio and on television, as well as at schools, to attract other young men to the participating agencies.

That two-thirds of the young men who joined the project did so as a result of outreach has obvious relevance for organizations that do not work with teenage mothers. Having contact with the female partner is not an indispensable requirement for setting up a program for young fathers, although the type of relationship that exists between the teenage parents is often a paramount influence in the father's decision to participate in the program and to be involved in the life of his young family. Almost three-quarters of the male participants considered their partners to be their girlfriends, and almost 10 percent were married; on average, the young men had known their partners for more than two years.

Obstacles

Reaching and serving teenage fathers were by no means easy feats; the participating agencies had to overcome a variety of obstacles throughout the project. Among the most important factors hindering the efforts of the Collaboration was agency ambivalence. If an agency is to reach young men effectively, support from the top is crucial. In the teen father project, the commitment of the participating agency's board of trustees was sometimes important, but most vital was the support of the agency administrator, who was generally responsible for hiring and supervising staff and for fundraising. Because the administrator often was called upon to integrate the teenage father project into a larger program, he or she had to be strongly committed to the concept, especially since staff members sometimes initially were uncomfortable about working with teenage fathers.

Where this sort of top-level support was lacking, the program was largely ineffectual. The administrator of one organization, for example, initially said that the agency was committed to serving young men; only later did he reveal a strong bias in favor of serving young women. His ambivalence and negative messages about serving young fathers came to permeate the agency and ultimately to undermine the work of the staff who ostensibly had been hired to work with the male teenagers. The lack of support for these staff members led eventually to their failure to recruit and serve teenage fathers effectively. One counselor in this agency said that "in my advocacy work, I feel that I'm working at cross-purposes with the agency's basic philosophy of protecting and serving women." Another commented that "we've come a long way with staff attitudes, but I'm still unhappy with them. There are many people on staff who are strong feminists and . . . feel that the females or the teen mothers basically are the ones who should be getting the help and the funds."

On the other hand, when the administrator's attitude was positive, problems that surfaced could be met and overcome. In one agency, the teenage father program originally operated separately from the program for young mothers. However, the agency's director encouraged all staff members to work together and discuss their cases with one another to get a more complete overview of the needs of young people. As a result, the teenage father program was seen not as an appendage to the rest of the agency, but as an integral part of the entire operation.

Staffing was another issue crucial to the program's success. Given the many problems of the young men entering the program, it soon became evident that each agency would need at least one full-time person to work with the fathers; a part-time counselor would not have sufficient time and energy to meet these teenagers' overwhelming needs. However, simply hiring a full-time staff member was by itself insufficient to ensure effectiveness. The person hired to work directly with the young men needed experience with such a population, knowledge of the psychology of male adolescents and a receptiveness to their needs and attitudes. In addition, since it is often much more difficult to reach young men than it is to reach young women, a counselor had to be willing to engage in active outreach. One counselor who could not bring himself to go into the community to recruit clients said, "I want to deal with people who are interested in getting services from me. If they feel that I have something to offer them and they come to my office and show their interest, then I feel comfortable. Just walking up to someone is not something I can do."

On a more subtle level, there also had to be a good fit between the counselor's personal characteristics and those of the teenage fathers. It was particularly important that the counselors be men, because they could serve as the role models that many of the teenagers lacked and convey the message that men are welcome at social service agencies. The experiences of the agencies that participated in the project indicate that a man in his 20s or 30s, from the same ethnic and cultural background as the teenage clients, usually worked best. Assertiveness and "street smarts" were deemed especially important qualities; a distant, formal staff member proved less effective than someone the teenagers could get to know and trust.

In addition, it was essential that the counselors who dealt with the young fathers have manageable caseloads. Although an overload of clients did not necessarily mean that the program would fail, it did sometimes result in overly long working hours for the staff, a lag in record-keeping and sagging morale.

Finally, one very important obstacle to the success of the project was the attitudes of many of the teenage men themselves. Some, aware of their general reputation as "victimizers" of young women, were suspicious when they were told about the program; they thought that program staff were only interested in exacting child-support payments from them or in punishing them because of the pregnancy. A question repeatedly asked was, Why do you want to help me? In addition, a number of the young fathers initially asserted that they did not need help, claiming that they had not needed help before and could fend for themselves now. Moreover, many of the teenagers who joined the project were irresponsible about keeping appointments. Others, however, had trouble keeping appointments because they were trying to juggle an unrealistic, almost impossible array of responsibilities, such as school, work and regular visits with their partners or their children. Finally, some were fearful about leaving their home area and traveling to another part of town to participate in nighttime sessions.

Conclusions

In the almost two years since the Collaboration ended, seven of the eight participating agencies have received further funding for teenage father programs. Four of the agencies are now a part of the Adolescent Family Life Collaboration, a research and demonstration project funded by the U.S. Department of Health and Human Services. These agencies provide help to teenage mothers, fathers and their extended families. Although progress has been made, the agencies that still offer programs for teenage fathers are sorely in need of more staff and increased funding to enable them to deal with the growing number of young fathers coming for services and to develop more comprehensive programs for both young men and young women.

The Teen Father Collaboration may have helped at least partially to erase the stereotype that all teenage fathers neglect their parental responsibilities. This stereotype has had particularly negative results in the legal arena, where the rights of young fathers have gone virtually unrecognized. Young men who want to establish paternity and give their children the rights that accompany that status (such as Social Security and veterans' benefits) are discouraged from doing so by the whole gamut of social service and legal agencies with which they come into contact. As successful programs for teenage fathers are established across the United States, people working in paternity adjudication should be made to recognize the positive impact that young fathers can have on their children's lives.

Many young fathers want to contribute financially to their children's upbringing, but have only a limited ability to do so because they are unemployed or need job training. Here, both public and private support are crucial. If increased funding were provided for state and community vocational programs, many young fathers would eventually improve their chances of employment and would be able to support their families.

The Teen Father Collaboration documented that some teenage fathers take advantage of social services and benefit from them, and the results suggest that more organizations need to work with these young men to help assure the well-being of their families. Families headed by teenagers need a great deal of assistance, and it makes little sense to help only the adolescent mother if she and her partner want to work out their problems together. Indeed, only if services are provided to both partners can they and their children be expected to move toward a self-sufficient future.

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Special Report

AIDS and Family Planning Clinics: Confronting the Crisis

By Patricia Donovan

The Challenge

- In November 1986, more than 150 family planning and abortion clinic directors and counselors, public health officials and private physicians attended a conference sponsored by Planned Parenthood affiliates in Washington, D.C., and Maryland to discuss the implications of acquired immune deficiency syndrome (AIDS) for providers of reproductive health care.
- In April 1987, the American College of Obstetricians and Gynecologists (ACOG) issued a statement on AIDS recommending that "women at risk of infection with the AIDS virus . . . be educated about the means of preventing infection in themselves, their sexual partners and their offspring," and that testing and counseling be offered "in any medical care setting in which women at risk are encountered, [including] private obstetric and gynecologic practices, . . . sexually transmitted disease clinics, family planning and fertility services, [and] prenatal and obstetric services."[1]
- In May 1987, the Centers for Disease Control (CDC) recommended that all women who seek family planning services in a clinic, hospital or doctor's office be routinely counseled about AIDS, and that pregnant women who are believed to have a high risk of infection or who live in areas with high rates of infection, as well as people who are being treated for other sexually transmitted diseases (STDs), be encouraged to undergo testing to determine if they have been infected with human immune deficiency virus (HIV). The CDC also suggested that it may be appropriate to offer testing to all women who visit family planning and prenatal clinics in certain neighborhoods or in cities with "moderate or high prevalence" of AIDS infection in young women.[2]
- In June 1987, the Planned Parenthood Federation of America (PPFA) issued interim policy guidelines on AIDS to its affiliates.* The guidelines state that clients should be counseled about AIDS "based on a determination of the risk category into which they fall," and that affiliates "should provide access (either directly or by referral) to voluntary HIV testing for their clients." The guidelines add that testing should be "routinely offered to . . . all pregnant women who are at risk of HIV infection."[3]
- Finally, in that same month, Planned Parenthood affiliates in areas with a large number of AIDS cases† met in Arlington, Virginia, for two days to report on their current AIDS activities and assess what more needs to be done in this area.

This ever-proliferating number of conferences, statements, guidelines and recommendations all reflect growing concern about the heterosexual and perinatal transmission of HIV. Most of the pronouncements also reflect the view that family planning clinics, which every year serve five million sexually active women (who are primarily young and of low income), can be an important point at which to slow the spread of the virus, since it is known that 80 percent of women presently suffering from AIDS are of reproductive age.

Currently, only about four percent of AIDS cases involve heterosexual transmission of the virus, but the number of such cases is expected to increase significantly in the next four years (from 1,100 new cases in 1986 to almost 8,000 new cases in 1991),[4] and the rate at which AIDS cases are increasing among heterosexual men and women is now twice that among homosexual and bisexual men,[5] who account for almost 70 percent of AIDS cases.[6] Moreover, pregnant women infected with HIV have a 30–50 percent chance of passing the infection on to their fetus in utero or during delivery,[7] and may risk advancing to a later stage of infection themselves if they continue the pregnancy to term.‡ About 70 percent of AIDS cases in women and 80–90 percent of cases in children are related to intravenous drug use, either by the woman herself or by her sexual partner.[8]

Given the gravity of this situation, how is the family planning community responding to the health crisis?

Condom Use

Of all the possible approaches to AIDS prevention, encouraging use of condoms is the activity that falls most readily within the traditional range of services offered by family planning clinics. However, this approach poses two problems for family planning providers. One is the difficulty of convincing people who do not view themselves as being at risk of HIV infection to use condoms. James Roderick, executive director of Dallas Planned Parenthood, says that patients attending his clinic are "reluctant to use condoms, and it's not an attitude that will change quickly. It has not sunk in yet that the disease can spread through heterosexual relationships. People are not taking the risks seriously."[9] Many providers report a similar reaction among their clients.

A more difficult issue, and one that may be unique to family planning providers, is how to persuade patients to use condoms to

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*The final version of the AIDS policy guidelines is expected to be developed by the executive committee of the PPFA board of directors at its meeting in August.

†Atlanta; Boston; Broward County, Florida; Chicago; Dallas; Essex County, New Jersey; Houston; Los Angeles; Miami; Nassau County, New York; New York City; Philadelphia; Riverside County and San Diego County, California; San Francisco; South Palm Beach County, Florida; and Washington, D.C..

‡A few small studies indicate that infected pregnant women who are asymptomatic and who continue their pregnancy are likely to develop AIDS or, at least, the symptoms of AIDS within a few months following delivery.

protect themselves from HIV infection without sacrificing a high level of protection against unplanned pregnancy. Most providers urge their patients to continue to use their regular method of birth control in addition to condoms, since the former is likely to be more effective than condoms in preventing pregnancy. (In 1983, 68 percent of clinic patients were using the pill;[10] using condoms instead of the pill involves a fivefold increase in the risk of an unplanned pregnancy in the first year of use.[11]) Since it is often difficult to get patients, particularly teenagers, to use their method of choice consistently, it may be unrealistic to think that they will use two methods consistently. There may be a risk that patients who fear HIV infection will forgo the more effective method and rely solely on condoms. Obviously, the possible consequences of HIV infection are more serious than those of an unplanned pregnancy; however, in many areas of the country, the risk of contracting HIV appears to be exceedingly low, especially among heterosexuals who do not engage in high-risk behavior.* Family planning providers, therefore, may decide that their aggressiveness in promoting condom use should be geared to the patient's relative risk of infection.

Education

There is almost total agreement among family planning providers and public health officials that it is appropriate and important to educate clinic patients about AIDS. "If we don't take the initiative and talk about AIDS . . . , it is not likely women will get the information somewhere else," notes Wayne Pawlowski, director of training at Planned Parenthood of Metropolitan Washington. "Family Planning clinics are the first line of information; we have to accept that responsibility and get women thinking and talking about AIDS."[12]

Family planning providers recognize, however, that before they launch programs to educate their patients, they must educate their own staff about AIDS. This is important for two reasons: so that staff can provide accurate information to patients; and to allay staff concerns that they could cach AIDS from patients.

Family planning providers in the private sector also stress the need to educate boards of directors and explain to them why it is appropriate for their agency to be involved with AIDS. Many boards may initially resist the idea of clinic involvement on the grounds that the disease is too controversial in their community or that the agency already has enough to do without getting into a new area (a concern of clinic staff as well). If the clinic is considering offering HIV testing as well as patient education, the board may also be concerned about possible legal liability if patient confidentiality is breached or if staff are exposed to the virus through infected blood samples.

"At the very least, . . . every family planning organization ought to be providing basic AIDS education . . . to all clients," asserts G. Stephen Bowen, deputy director of the CDC's AIDS program. Bowen urges clinics to integrate information about AIDS "into whatever the normal patient routine is, . . . including pamphlets, perhaps videos, and [also into the] training of staff. . . ."[13]

Clinics must decide whether to develop their own educational materials on AIDS or rely on the myriad pamphlets, fact sheets and videos currently available. The ethnic makeup and age distribution of the clinic's patient population may be determining factors in this decision. For example, clinics that serve large numbers of non–English-speaking women may need to develop materials directed specifically to that group, if they have the money and expertise to do so.

Pawlowski asserts that routine counseling sessions must include more than general information on how the AIDS virus is transmitted and how people can avoid becoming infected. "At a bare minimum, [family planning providers] have to be able to talk with every woman about her sex practices and partners and what she is going to do . . . to protect herself." He adds that many family planning counselors may not be prepared for this role and will need additional training. "You can't make the assumption that just because a counselor is comfortable talking about birth control, he or she will be comfortable talking about AIDS. It is a separate body of information. Birth control is about plumbing. AIDS is about safe sex practices. . . . Counselors must be comfortable with, and prepared to talk graphically about, every aspect of sexuality, including oral sex and anal sex." And, he asserts, counselors must be prepared to initiate the discussion rather than wait for clients to raise the subject.[14]

Counseling and Testing

Many family planning providers believe that they have a responsibility to try to identify women with an increased risk of HIV infection and either refer those women for counseling and testing or offer the services themselves. The CDC formally classifies five groups as being at high risk of HIV infection: homosexual and bisexual men, intravenous drug abusers, hemophiliacs and other recipients of blood products between 1978 and 1985, sexual partners of people falling into one of the first three groups, and babies born to HIV-infected mothers. In addition, heterosexuals who have had multiple sexual partners or a history of STD are widely viewed as having an increased risk of becoming infected. A recent advisory from the New York City Department of Health, for example, states that among women who should be offered HIV testing are "those with single or multiple sexual partners whose drug or sexual history is not known."[15]

Some family planning providers have initiated risk assessment of their patients, asking them to fill out questionnaires seeking such information as whether the women have had sexual intercourse within the last five years with a man who is bisexual, an intravenous drug abuser or a hemophiliac, or who came from Haiti or Africa; had a blood transfusion between 1980 and May 1985; have ever had intercourse with someone who had AIDS or was infected with HIV; have ever had an STD; have ever used intravenous drugs; or are pregnant. The women also are asked how many sexual partners they have had within the last 5–10 years.

Once risk assessment has identified candidates for testing, there are several blood tests that can determine whether an individual is infected with HIV. These tests detect not the virus itself, but rather the presence of antibodies to the virus, which indicates that infection has occurred.† The most widely used test is the enzyme-linked immunosorbent assay, otherwise known as ELISA. If a person has a positive ELISA result, the test is usually repeated at least once, using the same blood sample. If the result is still positive, another test, usually the Western Blot, is used to confirm infection. (No patient is given test results until all necessary confirming tests have been completed.) The ELISA is easy to conduct, inexpensive and, together with confirmatory tests, highly accurate.

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*At the Planned Parenthood affiliates meeting in Arlington, Susan Lloyd Schulz, clinic services consultant at the CDC, estimated on the basis of the number of women seeking services at family planning clinics in 1983, that 400 per 100,000 family planning clients in high-prevalence areas (which she defined as Connecticut, Florida, New Jersey, NewYork and Washington, D.C.) would test positive. In low-incidence areas, she said, the rate of positive results would be 10 per 100,000 family planning clients.

†Most people develop antibodies within 2–3 months of infection, but it can take as long as six months for antibodies to be detected. Thus, if a person tests negative for HIV, but engaged in risky behavior less than six months previously, he or she needs to be retested at the end of the six-month period.

Bowen suggests that by conducting risk assessment of patients, clinics can learn roughly what proportion of their clients may engage in high-risk behaviors, particularly intravenous drug use or sexual intercourse with intravenous drug users or bisexual men.* (He also points out that an anonymous survey of patient blood samples could provide some indication of HIV prevalence among clinic patients.)

Bowen believes that "the process of counseling and the decision to be tested and to learn one's antibody status can be a powerful mechanism for behavioral change."[16] Furthermore, he notes, the danger of passing the virus to a fetus during pregnancy is an important reason for high-risk women to know whether they are infected, so that they can avoid pregnancy if they have tested positive. In addition, Bowen says, patients who are infected with HIV should be evaluated for tuberculosis (to which such patients are particularly susceptible), and be told that avoiding other sexually transmitted diseases and other infections can reduce their chances of becoming clinically ill. This is important, according to Bowen, because research indicates that other infections can stimulate reproduction of the AIDS virus cells and lead to the onset of AIDS symptoms.

Family planning providers are convinced that the major cost involved in any testing program will be that of counseling, because of the time (usually estimated to be at least 30–60 minutes per session) and the number of specially trained staff required. The test itself may cost the clinics little, since state or county health departments are often willing to analyze blood samples without charge.

A recent report on AIDS points out that "counseling men and women who may be infected [with HIV] requires patience and skill, as well as knowledge. These people may be anxious, depressed or even suicidal. Some may be so depressed that they are unable to work."[17] Roderick stresses that "HIV testing requires heavy-duty counseling. . . . We're not used to dealing with death and dying, and that is a high likelihood for many people infected with HIV."[18]

The ACOG notes that "because of the extremely significant implications [of] HIV infection, it is important to ensure, before . . . testing . . . that the person understands the potential implications of being tested and that he or she agrees to be tested and to receive the counseling that will be necessary after the test results are available." Women who are found to be infected with HIV "must be educated about the significance of the infection, the risk they pose to uninfected sexual partners, [and] the potential for transmission to others if they become pregnant [or] inject drugs intravenously and share their equipment with others." The professional body also recommends that because of the risk of perinatal transmission, HIV-infected women "should be strongly encouraged not to become pregnant and should be provided appropriate family planning assistance. Those who do become pregnant should be counseled again about the risks to themselves and their child and should be informed about the option of pregnancy termination."[19]

Family planning providers expect posttest counseling for women who test positive to be the most costly part of any counseling and testing program. At Planned Parenthood of New York City (PPNYC), assistant director Sally Kohn says, such women will be offered two counseling sessions. "It seems to make a difference if people have an opportunity to come back, because they don't hear much after they get the news that they are positive. All they hear is 'I'm going to die.' "[20] After the two counseling sessions, HIV-positive clients will be referred to an AIDS support program.

Pawlowski asserts, however, that pretest counseling is "almost as important as posttest counseling. A lot of people decide not to be tested after they've had a chance to reevaluate their risk of infection with someone who is informed about risk factors."[21]

The charges for HIV testing vary considerably in the few family planning clinics that are currently offering testing. In the Florida health department clinics, the service is free; the costs are covered by a grant from the CDC. By comparison, Planned Parenthood of Shasta-Diablo, California, charges patients $40. This testing program, which operates one night a week in the agency's Walnut Creek clinic, is open to anyone wishing to be screened; those who cannot pay the fee are referred to the county health department. Heather Estes, executive director of the affiliate, says that until public funds are available for testing, her agency will not be able to offer the service to those who cannot pay.[22]

In communities with a large number of AIDS cases, where demand for the test and the number of positive test results are likely to be greater, the costs of providing HIV testing in family planning clinics may be quite high. Kohn, of PPNYC, says her agency estimates that the cost of a testing program offered to the agency's 32,000 patients may ultimately reach $140,000. According to PPNYC's executive director, Alfred Moran, testing will be offered to new and old patients who come for family planning services, and "probably" to their sexual partners. (Including sexual partners would increase the cost of the testing program.) But, he adds, "we are not prepared to run an open community testing service, because we believe that is a public responsibility." If the testing program were opened to the entire community, it's expense would "deflect use of family planning funds," Moran asserts.[23] (The agency hopes to raise private funds to support testing.)

Some private family planning providers are reluctant to open up a testing program to the public for fear they will be swamped by the demand for the service. Pawlowski points out, however, that family planning clinics have "traditionally provided services to women; if they offer testing, they are most likely to see women who fear HIV infection, not gay males." Indeed, he adds, one of the factors in a family planning clinic's decision to offer testing should be whether there are "other places in the community where heterosexual women can feel comfortable going for HIV screening."[24]

Confidentiality

A major issue surrounding HIV testing is a family planning clinic's ability to guarantee the confidentiality of the test results. The CDC notes that "AIDS victims have experienced unequal treatment in such areas as employment, school admission, housing, medical services and insurance coverage," and that those undergoing testing must "be given protection against discrimination if they are antibody-positive."[25] Family planning providers routinely treat their patients' medical records as confidential, but programs for HIV testing necessitate special efforts to ensure that results are not divulged inadvertently by clinic staff. The ACOG statement on AIDS points out that protecting medical records, reports and information pertaining to the test results from unauthorized disclosure "will often

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*As many as 20 percent of homosexual men are bisexual. The National Academy of Sciences notes that these men "represent a large reservoir for potential infection of women and their offspring and for further heterosexual spread of infection." (See: Institute of Medicine, National Academy of Sciences, *Confronting AIDS: Directions for Public Health, Health Care and Research*, National Academy Press, Washington, D.C., 1986, p. 8.)

require special training or information for employees and others working in the office or medical care setting."[26]

Testing can be done on either a confidential or an anonymous basis. In confidential testing, the person undergoing the test is identified by name, and the results are recorded by name, although they are often kept in a separate, locked file. The results may not be released to an insurance company or other third party without the patient's written permission. Under most circumstances, the results—and the fact that the person underwent the test, which in itself is sometimes the basis for discrimination—would be protected from disclosure; however, it is possible the information could be obtained through a court subpoena or in a lawsuit. In anonymous testing, the patient is never identified by name, but is given a number that is used to match him or her with the test result.

Anonymous testing obviously provides greater guarantees that an individual's HIV status will not be divulged. However, many family planning providers believe that it is important to develop a continuing relationship with their patients, and this kind of relationship would be precluded if testing were offered anonymously. (Some administrators also believe that it would be difficult, if not impossible, for family planning clinics to offer anonymous testing to clients already known to them.) Moreover, health officials point out that as new treatments become available, it will be important to be able to get in touch with patients who have tested positive. This sort of follow-up would not be possible under conditions of anonymous testing. On the other hand, some people will agree to be tested only under anonymous conditions, so family planning providers should be prepared to refer such patients to a testing site where anonymity is observed.

In some states, the decision whether to offer confidential or anonymous testing will be governed by state law. New York health department regulations, for example, currently require medical facilities (other than HIV testing centers operated by city and county health departments) to include all medical diagnoses and lab tests in a patient's medical record, and Colorado requires that the names of persons who have tested positive be reported to the state health department. Florida, on the other hand, specifically protects the confidentiality of HIV test results, even if medical records are subpoenaed.

Parental consent for minors seeking AIDS testing is also an issue for family planning providers. Moran points out that in New York, medical diagnosis and treatment for minors suffering from an STD can be provided without parental involvement. AIDS, however, has not been designated as an STD by the state health department. (If it were, health providers would be required by law to notify the sexual partners of infected persons.)

The issue of contact tracing is worrying to many family planning providers. They believe that HIV-infected people should be strongly encouraged to inform their sexual partners or to allow the health care provider to do so. However, most providers also believe that mandatory notification is neither workable nor desirable.

In deciding whether to offer testing, therefore, providers must familiarize themselves with applicable state laws on disclosure and reporting, and then decide if they can comfortably operate within those laws. In states that require reporting of HIV test results, Bowen suggests that clinics try to work out with the state a way to code the results to protect the individual's privacy. Clinics should also consider the possibility that some states might change their laws on reporting and force providers retroactively to reveal the results of confidential HIV tests to the state health department.

Infection Control

The recent disclosure that three health care workers became infected with HIV after their skin was exposed to blood from infected patients is an important reminder that whatever their programs, clinics must assume that they have already served, and will continue to serve, women who either do not know that they are infected with HIV or know and are are not willing to inform the clinic staff. "If in doubt—and we should all be at this point—consider the patient as if infectious, and treat every patient cautiously," advises Diane Dwyer, medical epidemiologist at the Baltimore health department.[27] Jennifer Carl, of the Cedar River Clinic in Renton, Washington, recommends that abortion clinic staff "consider fetal and maternal blood, amniotic fluid, products of conception . . . and cervical and vaginal secretions to be infectious." She adds that "extraordinary infection control measures are not needed. What is needed is extraordinary care in the application of standard infection control procedures" already in place to protect staff from hepatitis B, which is far more infectious than AIDS.[28] The extent to which abortion providers around the country are refusing to serve HIV-positive women because of fear of infection is not known at this point. It is clear, however, that the risk of transmission of the virus to the fetus makes the availability of abortion imperative for infected women.

Louise Tyrer, medical director of the PPFA, points out that in addition to addressing the need to protect clinic staff from patients who may be infected with the AIDS virus, family planning providers must be prepared to deal with the likelihood that some member of the staff will become infected.[29] Dwyer contends that the risk of that employee's passing the virus on to patients and other staff members is "extraordinarily low. . . . There is no need to restrict [infected employees] from work if they take appropriate . . . precautions (which everyone should be taking), unless there is evidence of another disease, for example, tuberculosis, salmonella or weeping herpes dermatitis, that would [disqualify] any worker."[30]

Conclusions

Most family planning providers agree that information about AIDS and the behavior that places women at risk of infection should be part of patient education in all clinics providing reproductive health care. There seems to be an emerging consensus also that clinics in areas with high rates of HIV infection (particularly those that serve large numbers of high-risk women) should consider initiating in-depth counseling and testing programs. Providers in low-incidence areas may decide to initiate a testing program at the request of their local governments or because of large numbers of requests for testing from their clients.

The decision whether to offer testing may hinge on the availability of public funds—federal, state or local—to support a testing program. Currently, there is very little public money available to family planning clinics to provide HIV testing. That situation may change in the near future, however. Rep. Henry Waxman (D.-Calif.) and Sen. Edward Kennedy (D.-Mass.) are reportedly planning to introduce legislation that would make federal funds available to certain health care providers—including family planning clinics that receive Title X funds—to support voluntary AIDS testing. Funds for educational efforts may become available as well. The Senate Labor and Human Resources Committee, chaired by Sen. Kennedy, has approved legislation to establish a grant program through the CDC to help local governments and public and private nonprofit organizations develop or expand their educational, information and risk-reduction activities related to AIDS.[31]

At the Planned Parenthood meeting held

(Continued on page 138)

Comment

Population Replacement and Immigrant Adaptation: New Issues Facing the West

By Thomas J. Espenshade

Industrialized nations are entering a new stage in the demographic transition from high birthrates to low birthrates, and as they do, questions are being raised about the need to rethink immigration policies. As rates of natural increase decline and as the proportion of total population growth derived from immigration rises, attention is also being focused on the immigrants themselves, and concerns are being expressed about their adaptation to a new life in the countries that receive them. This article considers some of the implications of continued low indigenous fertility, even as immigration increases, and it suggests a strategy for resolving an emerging demographic dilemma that is facing the Western democracies.

Since 1965, fertility rates in many developed countries have fallen substantially below the level needed for population replacement. For example, prior to 1972, fertility rates in the United States were consistently above replacement. The only exception occurred during a few years in the middle of the Great Depression; and with the jump in fertility following World War II, that brief episode was quickly forgotten. After the war, total fertility rates in the United States peaked at 3.8 during the late 1950s and declined only slightly, to 3.7, by 1960. But they fell sharply, to 2.5, by 1970, and then in 1972 dropped below the level of 2.1 needed for replacement. Fertility rates have remained below replacement ever since, and have exhibited an essentially flat trend line since a low of 1.8 lifetime births per woman was achieved in 1975.

Fertility levels in other industrialized countries have also declined precipitously.[1] By the mid-1980s, total fertility rates averaged 1.8 in northern Europe and 1.5 in western Europe, including levels as low as 1.3 in Denmark and West Germany.[2] Moreover, there seems to be little chance of a sharp reversal anytime soon.

As fertility was declining, international migration to the West—much of it from Third World countries—was accelerating, both in absolute numbers and as a proportion of total population growth. While various guest worker programs designed to alleviate labor shortages in the 1950s and 1960s stimulated movement to France, Sweden and West Germany, decolonization spurred immigration to Great Britain and the Netherlands. A number of immigration reforms carried out in the 1960s ended the practice of discrimination against entrants from non-European countries and brought new waves of immigrants to Canada and the United States. Unrecognized as such at the time, these international movements have become a very important demographic phenomenon.[3]

In 1970, the foreign-born share of the total U.S. population equaled 4.7 percent, but by 1980, low birthrates coupled with growing levels of immigration had boosted that proportion to 6.2 percent.[4] The number of legal immigrants rose from about 300,000 per year in the early 1960s to more than 570,000 per year in the first half of the 1980s,[5] and some estimates suggest that the United States may now be accepting nearly twice as many immigrants and refugees as all other nations combined.[6]

The contribution of immigration to total U.S. population growth accelerated from about 13 percent in 1960–1964 to 28 percent by 1980–1985.[7] (Data for 1980–1985 include an allowance for illegal immigration not included in earlier years and an increase in the estimated amount of emigration.) During the 1980s, most legal U.S. immigrants have come from Latin America (35 percent) and Asia (48 percent), while the European proportion has totaled just 11 percent.[8]

Immigration from Third World countries contributes to population growth in two ways: through the addition of the immigrants themselves and through their subsequent fertility, which is often higher than that of the nonimmigrant population. In 1965, West Germany registered a natural increase of 366,300 people, the result of an excess of 334,000 births over deaths among the native German population and of 32,300 births over deaths among immigrant workers. But by 1975, natural increase had turned negative. Deaths among the indigenous population exceeded births by 235,600, whereas surplus births among immigrants rose to 99,000. Thus, immigration and natural increase among immigrants were the only source of demographic increase in West Germany that year. Similarly, in France, the total population increased by 11 million people between 1950 and 1975; almost two-thirds of that increase was due to immigration and one-third, to natural increase. Since 1975, nearly all of the growth in the French population has been due to higher birthrates among immigrant North Africans.[9]

Demographic Implications

The demographic dilemma facing Western industrial nations becomes clear if one assumes that their low fertility is a permanent condition. In the absence of immigration, populations with continued below-replacement fertility will eventually decline in size. Depending upon the current age structure of each country's population,

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such declines may begin soon or be delayed until well into the 21st century.[10]

Some writers do not believe that low fertility in industrialized countries is here to stay. They argue, for example, that fertility will rise in the 1990s when the small baby-bust cohorts of the late 1960s and 1970s, who will not experience the competition for resources that larger cohorts experience, enter adulthood;[11] one projection based on this argument predicts that U.S. births will climb from 3.3 million in 1978 to 4.6 million in 1997.[12]

Most demographers, however, expect fertility in developed countries to remain low, reasoning that low fertility results from "the convergence of a number of social revolutions, each of which exerts an antinatalist effect."[13] Some argue that fertility is likely to go even lower.[14] The prevailing consensus in the United States, which could be applied to other Western industrial nations as well, is summed up best by Charles F. Westoff:

> When we consider [the basic social forces that underlay the historical decline in fertility] and observe that fertility in the United States has been declining for two centuries (with the exception of the baby boom, which may indeed have been the demographic aberration), and when we see similar and even more extreme declines in other Western countries in recent decades, the conclusion that fertility appears destined to remain low seems inescapable. The greater uncertainty appears to be how low it will fall.[15]

It is worth mentioning that in Western industrial democracies, government efforts to reverse undesirable fertility trends have been notably unsuccessful. Many of those countries, for example, have progressive systems of child allowances, designed partly with a pronatalist intent. West Germany has such a program, yet its fertility is the lowest in the world. Nor are Western nations likely to adopt stronger, more broadly based policies in the future to stimulate fertility. The expense of an effective program and a lack or a "muted sense" of nationalism prevent forceful action to stimulate birthrates.[16]

A country that has below-replacement fertility may encourage immigration to achieve numerical stability.* Encouraging immigration often leads, however, to changes in the ethnic, racial, cultural and linguistic composition of a population—changes that concern some people. In western Europe, where these compositional changes are occurring more quickly than in the United States, concern has frequently become intense when traditional majority populations have felt threatened by the prospect of being displaced with people considered different. For this reason, Michael Teitelbaum and Jay Winter comment: "Recent developments in France and Germany once more highlight the extent to which the matters raised [here] go far deeper than the administrative and technical, touching sensitive and important political issues likely to cloud and complicate present and future policy debates."[17]

Evidence that compositional changes in the U.S. population are already occurring is contained in recent projections of the proportion that is Hispanic. According to the U.S. Bureau of the Census, the Hispanic population of the United States is growing three times faster than the total population and, by the year 2080, may comprise 19 percent of U.S. residents—up from seven percent in 1982.[18] The white non-Hispanic population, which now accounts for 79 percent of the total, is projected to drop to 74 percent in the year 2000, to 66 percent in 2030, and to 57 percent in 2080. The number of white non-Hispanic residents may peak by the year 2020 and then steadily decrease. Furthermore, in population projections prepared by the Census Bureau that assume an intermediate position between high- and low-growth possibilities, post-1982 surviving immigrants and their descendants will account for 80 percent of total U.S. population growth between 1982 and 2080; they will make up 10 percent of the total U.S. population by 2030 and 20 percent by 2080.[19] (To keep things in perspective, readers should be aware that one estimate shows that 28 percent of the U.S. population in 1970 consisted of post-1870 surviving immigrants and their descendants. On the other hand, immigration and natural increase among immigrants during the 100 years from 1870 to 1970 accounted for only 35 percent of total U.S. population growth.[20]) These projected compositional changes will occur more quickly if immigrants and their near-term descendants are assumed to have higher fertility than the indigenous population.

If fertility in Western industrial nations remains low, three broad conclusions follow. First, in the short run at least, the potential for change in ethnic, racial, linguistic and other compositional aspects of national populations is probably greater in Europe than it is in the United States. Not only are most European populations less diverse to begin with than is the case with the U.S. population, but neither did Europe experience a baby boom comparable in magnitude or duration to the one that occurred in the United States after World War II. As a result, European populations do not have age distributions with the same degree of built-in momentum for future population growth; therefore, these countries lack a "protective mantle of natural increase" that softens and to some extent obscures recompositional trends tied to immigration.[21]

Second, unless they wish their populations to decline, countries with below-replacement fertility need immigrants—if not now, then eventually. Without immigrants, many populations in the West would soon reach zero population growth, and then begin to decline. Population decline would bring with it sharply older age distributions and correspondingly higher old-age dependency burdens than the ones that exist presently. It could also slow, and possibly even reverse, the trend of increasing specialization of human capital, thereby making the management of economic growth more uncertain. With immigrants, these countries can maintain numerical stability, although they might not be able to check completely the aging process that accompanies prolonged below-replacement fertility.[22]

Third, populations that have both immigration and low fertility for a prolonged period exhibit a kind of demographic transfusion: The indigenous population and its descendants eventually diminish and are succeeded by a new population of immigrants and their descendants. Whether these developments are likely to trigger policy concerns depends on the individual context in which immigration arises; in particular, it depends on how much like the indigenous population the immigrants and their descendants are or subsequently become.

Social Issues

To develop this last point, it is useful to distinguish three contexts in which immigration can take place. The first is a hypothetical one in which below-replacement fertility, mortality and annual immigration have been constant for so long that an es-

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*Detailed discussion of the effect on population size of different combinations of fertility rates and immigration levels can be found in T. J. Espenshade and L. F. Bouvier, "Fertility, Immigration and Isopops," *Intercom*, **10**:8, 1982; T. J. Espenshade, "Paths to Zero Population Growth," *Family Planning Perspectives*, **15**:148, 1983; T. J. Espenshade, L. F. Bouvier and W. B. Arthur, "Immigration and the Stable Population Model," *Demography*, **19**:125, 1982; and T. J. Espenshade, "Population Dynamics with Immigration and Low Fertility," *Population and Development Review*, Supplement, **12**:248, 1987.

sentially stationary population has been in existence for at least a lifetime. If this stationary population is taken as the "starting" population and if immigration continues, the starting population and its later descendants will diminish and be replaced by a new population of immigrants and their descendants. But as long as the level and composition of the immigrant flows do not change, there will be no apparent change in either the size or the composition of the overall stationary population. The fact that one population is being replaced by another will hardly be noticed and will therefore be unlikely to arouse policy concerns.

In the second case, a population begins to take in immigrants in substantial numbers, after having had relatively little recent experience with immigration. This situation is approximated by several western European countries. A third case arises when a country with a lengthy history of immigration finds that the source of that immigration has suddenly changed. The United States provides a contemporary example because the primary source of its immigrants has shifted from Europe to Asia and Latin America.

In the last two circumstances, population replacement tends to generate concern. Allan Carlson believes that the potential for a backlash against immigrants exists in the United States. He cautions, "If [immigration and low fertility] continue over the next several decades, it is folly to assume that there will not be major political and cultural consequences. Among other things, conditions would be ripe for a latter-day wave of passionate, possibly ugly, nativist and xenophobic reaction."[23]

According to news accounts, an immigrant backlash seems to have been a dominant factor in the outcome of a recent election in California. In a city council election in Monterey Park, a small Los Angeles suburb, three incumbent minority Americans—the nation's first female Chinese American mayor and her two Latino colleagues—lost to three Anglos. Two of the winners had championed English as the official city and state language, and one of the victors was quoted as saying, "The American people, as friendly and as generous and as flexible as they are, have come to a point in the road where they want proof that their rights and their dreams are not all going to be replaced."[24]

A more significant development with potentially far-reaching implications occurred in November 1986, when California voters overwhelmingly passed an amendment to the state constitution that proclaims English the official language of the state of California. It requires the legislature and state officials to take all steps necessary to ensure that the role of English as the common language of the state is preserved and enhanced. Similar ballot initiatives, under way in other states with growing immigrant populations, indicate a widespread fear that immigrants and their children, by failing to learn English and perhaps to adjust to American society in other ways as well, are threatening the status quo.

Related concerns about the adaptability of immigrants have surfaced in Europe. Most of the reaction in West Germany has been muted. But in 1982, in the surprisingly direct "Heidelberg Manifesto," a group of 15 prominent German professors called for the repatriation of immigrants in West Germany, stating:

> It is with grave concern that we observe the infiltration of the German nation by millionfold waves of foreigners and their families, the infiltration of our language, our culture and our national characteristics by foreign influences. . . . The integration of large masses of non-German foreigners and the preservation of our nation thus cannot be achieved simultaneously; it will lead to the well-known ethnic catastrophes of multicultural societies. . . . For the Federal Republic of Germany, which is one of the most heavily populated countries of the world, the return of the foreigners to their native lands will provide ecological as well as social relief.[25]

Such negative reaction to immigrants has been less of an exception in France, where it has become a political issue. In the March 1986 parliamentary elections, Jean-Marie Le Pen, an outspoken candidate of the far right wing, blamed immigrants for taking away jobs and causing crime, and campaigned on the slogan "two million immigrants equals two million unemployed."[26] Having scored an approval rating of just one percent in public opinion polls a few years earlier, his party received almost 10 percent of the vote in the 1986 parliamentary elections and succeeded in moving the immigrant question to the top of the national agenda.

Similar accounts could be recited in other countries. But whether these stories refer to Asians in Canada, West Indians in Great Britain or Surinamese in the Netherlands, the theme is almost always the same. Increasingly, immigrants are the focus of tension and often the targets of abuse and violence. Many whites, fearful of becoming a minority in their own country, share British Prime Minister Margaret Thatcher's concern about being "swamped" by outsiders.[27]

The preceding discussion delineates the emerging dilemma for policy-makers in developed countries confronting the two trends of immigration and low fertility. Because fertility rates are at levels that are insufficient to replace these populations in the long run, and because there is little hope that these rates will rise above replacement anytime soon, immigrants will be needed for their contribution to demographic stability. At the same time, the public's dissatisfaction with the presence of a large and growing immigrant community typically swells as the proportion of total population growth attributable to immigration rises. For this reason, many doubt that immigration as a solution to population decline will prove to be politically acceptable unless the immigrants are seen as similar in character to the native population.[28]

Recommendations

Because it is a national policy to admit large numbers of new immigrants to the United States each year, the government should more closely examine what happens to immigrants once they have entered the country, how well immigrants adjust to life in the United States, and what can be done by the host population to facilitate this adjustment. Our society should take steps to ensure that minority immigrant populations do not constitute a permanent underclass. Immigrants and their children must be enabled and encouraged to move into the mainstream of society and to participate fully and equally in its economic, social and political institutions.

Implementing these objectives means confronting the perception that recent immigrants are not integrating well. Added energy and resources appear to be needed in four areas. First, improved information is needed on the speed of adjustment of different immigrant groups along economic, social, demographic and political dimensions. These dimensions encompass issues of employment, earnings and job mobility; education, occupation, English-language proficiency and social mobility; fertility, family structure and residential segregation; and political participation. A detailed picture of how disparate immigrant groups in the United States compare in their demonstrated success at adaptation is currently missing.

Second, the experiences of immigrants in various parts of the United States need to be examined to determine if immigrant adjustment is mainly a function of an immigrant's individual characteristics and endowments (such as education, work experience and country of origin), or if the structural composition of the community in which an immigrant settles exerts a stronger influence. Regions of special interest include southern and northern California, Florida, Texas, the New York metropolitan area, Chicago, Denver and Washington, D.C.—all areas with large immigrant communities.

Third, historical studies are needed that will compare immigrant adaptation at the beginning of the 20th century with contemporary experience to assess whether immigrants are having a harder time adjusting today than they did previously.

Fourth, it is important to begin to identify the facilitators of and barriers to adaptation encountered by immigrants, and to determine what policy steps may be needed to minimize the obstacles.

Objective information in these four areas would contribute to several important goals: It would sensitize U.S. policy-makers to issues related to immigrant adaptation; assist policy-makers in formulating effective policies and programs for new immigrants by illuminating the choices; and increase public awareness of the adjustment process in order to neutralize the kinds of nativist tendencies beginning to emerge in the United States.

Some countries are farther along than others in thinking seriously about policies to ease the transition of immigrants to a new environment. In Sweden, for example, policies enacted in the 1970s further equality between immigrants and the native population, provide for cultural freedom of choice for immigrants and minorities and establish a political and cultural partnership among all communities. One law requires employers to give every foreign national who does not know Swedish 240 hours of paid leave of absence to learn the language; employers are obligated to pay wages for the duration of these studies, even if lessons take place outside working hours.[29] Finally, Sweden has a cabinet minister for migration affairs, which illustrates the importance Swedes attach to issues surrounding international migration.

By contrast, although the United States has an explicit immigration policy, it does not have an explicit immigrant policy. U.S. immigration policy consists largely of simple gatekeeping functions—determining who is and who is not eligible for entry. Once immigrants have been admitted, the federal government acts as though its responsibility to them has ended. The Immigration Reform and Control Act of 1986 is characteristic of these features of U.S. immigration policy. This law aims to assert better control over the gate by penalizing employers who knowingly hire illegal aliens, legalizing undocumented immigrants who can meet certain continuous-residence requirements, strengthening the border patrol and granting temporary-resident status to some farmworkers harvesting perishable products. As in the past, a missing component in the latest round of U.S. immigration reform is any initiative by either the public or the private sector to address the adjustment of newly legalized immigrants to their new surroundings.

What policy choices exist in the United States for resolving the emerging demographic dilemma brought about by the combination of record-low fertility and rising immigration? Social conservatives have focused on a fertility solution. Ben Wattenberg and Karl Zinsmeister, for example, have urged changes in the U.S. tax laws to "reweight the options available to the modern woman regarding the trade-off between childbearing and wage earning."[30] But this proposed remedy is likely to receive a cool reception, especially among the young people on whom the future course of fertility will depend. Moreover, as the European experience clearly demonstrates, it is extremely difficult, if not impossible, for a government to buy babies.

Instead, the United States ought to pursue a conscious and deliberate immigrant policy to complement its immigration policy. The long-run purpose of an immigrant policy should be to reduce barriers to immigrant adjustment and to help smooth the transition of new immigrants into the mainstream of U.S. society. At a minimum, there is a role for government in averting situations that are likely to foster an "us"-vs.-"them" mentality and in giving serious attention to specific policies and programs that will promote the corporate "we."

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Comment

Risking the Future: A Symposium on the National Academy of Sciences Report on Teenage Pregnancy

In 1984, the Committee on Child Development Research and Public Policy within the National Research Council of the National Academy of Sciences established the Panel on Adolescent Pregnancy and Childbearing, charged with the tasks of reviewing relevant research and program experience in the area of teenage pregnancy and recommending approaches for policy formulation, program design, research and evaluation to address this problem in the United States. Early this year, the panel's findings, conclusions and recommendations were published in a report entitled* Risking the Future: Adolescent Sexuality, Pregnancy, and Childbearing.[1]

Excerpts from the lengthy summary of the panel's deliberations are presented in the first section of this symposium. Following these excerpts are comments on various aspects of the report by four professionals concerned with the issue of adolescent pregnancy and childbearing.

Summary

. . . More than one million teenage girls in the United States become pregnant each year, just over 400,000 teenagers obtain abortions, and nearly 470,000 give birth. The majority of these births are to unmarried mothers, nearly half of whom have not yet reached their 18th birthday.

For teenage parents and their children, prospects for a healthy and independent life are significantly reduced. Young mothers, in the absence of adequate nutrition and appropriate prenatal care, are at a heightened risk of pregnancy complications and poor birth outcomes; they are also more likely to experience a subsequent pregnancy while still in their teens. The infants of teenage mothers also face greater health and developmental risks.

Despite declining birthrates since 1970, adolescent pregnancy, abortion and childbearing have remained considerably higher in the United States than in the majority of other developed countries of the world, even though the age of initiation and rates of early sexual activity are comparable. The most striking contrast is among the youngest teenagers: U.S. girls under age 15 are at least five times more likely to give birth than are young adolescents in any other developed country for which data are available.

Teenage families with children are disproportionately fatherless, and most are poor. Teenage marriages, when they occur, are characterized by a high degree of instability. In addition, teenage parents, both male and female, suffer the negative impact that untimely parenting has on their education and the related limitation of career opportunities. Teenage parents are more likely than are those who delay childbearing to experience chronic unemployment and inadequate income. Because these young people often fare poorly in the workplace, they and their children are highly likely to become dependent on public assistance and to remain dependent longer than those who delay childbearing until their twenties. Society's economic burden in sustaining these families is substantial.

. . . There is widespread disagreement among political, educational and religious leaders, as well as parents, about the problems of adolescent pregnancy and what to do about them. Indeed, many people feel that the primary emphasis of U.S. social policy should be on eliminating poverty, strengthening family ties and enhancing young people's perceptions of their futures. The panel joins those who believe that the primary goal should be to ameliorate [socioeconomic] conditions, and perhaps in doing so also solve the problems of adolescent pregnancy and childbearing in America. Unfortunately, however, scientists, policy-makers and concerned citizens have so far been unable to find easy and effective solutions to these greater social and economic problems. As a result, during the past two decades, there has been no coherent U.S. policy toward adolescent pregnancy and childbearing, despite explicit recognition on the part of many that government involvement is needed and appropriate.

. . . The Panel on Adolescent Pregnancy and Childbearing undertook a comprehensive examination of issues associated with teenage sexual and fertility behavior and reviewed what is known about the costs and benefits of alternative policies and programs to address these issues. On the basis of two years of review, analysis and debate, the panel has reached six general conclusions:

1. Prevention of adolescent pregnancy should have the highest priority. In both human and monetary terms, it is less costly to prevent pregnancy than to cope with its consequences; and it is less expensive to prevent a repeat pregnancy than to treat the compounded problems.
2. Sexually active teenagers, both boys and girls, need the ability to avoid pregnancy and the motivation to do so. Early, regular and effective contraceptive use results in fewer pregnancies. Delaying the initiation of sexual activity will also reduce the incidence of pregnancy, but we currently know very little about how to effectively discourage unmarried teenagers from initiating intercourse. . . . Therefore, making contraceptive methods available and accessible to those who are sexually active and encouraging them to diligently use these methods is the surest strategy for pregnancy prevention.
3. Society must avoid treating adolescent sexuality as a problem peculiar to teenage girls. Our concept of the high-risk population must include boys. . . .
4. . . . Our broad goal is the same for all young people: that they develop the necessary capabilities to make and carry out re-

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*The members of the panel were Daniel Federman (chair), Wendy Baldwin, Ezra C. Davidson, Jr., Joy G. Dryfoos, Jacqueline Darroch Forrest, Frank F. Furstenberg, Jr., Beatrix A. Hamburg, Richard Jessor, Judith E. Jones, Frank Levy, Robert H. Mnookin, Kristin A. Moore, Ross D. Parke, Harold A. Richman and Maris Vinovskis. Cheryl D. Hayes was the study director, and Sandra L. Hofferth was adviser to the study.

sponsible decisions about their sexual and fertility behavior. The strategies for achieving these goals and the specific interventions to carry them out, however, should be sensitive to differences in values, attitudes and experiences among individuals and groups.

5. If trade-offs are to be made in addressing the special needs of one group over another, priority should be given to . . . young adolescents and those from the most socially and economically disadvantaged backgrounds. In many ways, those at highest risk are hardest to serve, yet they are also the groups that have been shown to benefit most.

6. Responsibility for addressing the problems of adolescent pregnancy and childbearing should be shared among individuals, families, voluntary organizations, communities and governments. . . . Public policies should affirm the role and responsibility of families to teach human values. . . .

. . . Many of our recommendations build on policies, programs and research that are already under way, and many reinforce the priorities of other individuals and groups that are addressing the complex and controversial issue of adolescent pregnancy. The panel has identified three overarching policy goals, presented in order of priority, that provide a framework for our specific conclusions and recommendations: . . .

Goal 1: Reduce the rate and incidence of unintended pregnancy among adolescents, especially among school-age teenagers. . . . Several strategies can assist in achieving this goal: enhance the life options of disadvantaged teenagers; delay the initiation of sexual activity; and encourage contraceptive use for teenagers who are sexually active. . . .

. . . For too many high-risk teenagers, there are too few disincentives to early childbearing. Inadequate basic skills, poor employment prospects and the lack of successful role models for overcoming the overwhelmingly negative odds of intergenerational poverty have stifled the motivation of many to delay immediate gratification and avoid pregnancy. . . . Several possible interventions are aimed at indirectly reducing adolescent fertility by nurturing the motivation to prevent untimely and unplanned parenthood, including life-planning courses, programs to improve school performance, employment programs and programs to provide role models for high-risk youth. . . .

. . . Several interventions are [also] aimed at helping young people delay sexual initiation, including sex and family life education, assertiveness and decision-making training, programs to provide role models to young adolescents and efforts to influence the media treatment of sexuality. Although there is little available evidence to document their effectiveness, the panel endorses the development and evaluation of such programs. . . .

. . . Because there is so little evidence of the effectiveness of the other strategies for prevention, the panel believes that the major strategy for reducing early unintended pregnancy must be the encouragement of diligent contraceptive use by all sexually active teenagers. Male contraception, as well as male support for female contraception, is essential. In light of the demonstrated effectiveness of contraceptive use, especially use of the contraceptive pill and the condom, . . . the panel concludes [the following:]

- Use of the contraceptive pill is the safest and most effective means of birth control for sexually active adolescents. Aggressive public education is needed to dispel myths about the health risks of pill use by girls in this age-group, and contraceptive service programs should explore nonmedical models for distribution of the pill.
- . . . There must be continued public support for contraceptive services to adolescents, such as has been supplied primarily through Title X of the Family Planning Services and Population Research Act, Medicaid and other federal and state maternal and child health programs. . . .
- Sex education programs [should] include information on methods of contraception, how to use them and how to obtain them.
- . . . Contraceptive services should be available to all teenagers at low or no cost. Clinic service providers, whether based in hospitals, public health departments, private clinics or community service organizations, should make efforts to improve the effectiveness of their programs by (1) enhancing their outreach efforts to encourage earlier use of contraceptive methods; (2) exploring more effective counseling approaches to encourage compliance, and (3) enhancing their follow-up of clinic patients to track their contraceptive use.
- School systems, in cooperation with various health care and youth-serving agencies, should further develop and refine comprehensive school-based clinic models for implementation in schools with large high-risk populations.
- The development, implementation and evaluation of condom distribution programs [should be pursued].
- Efforts should be undertaken to develop and test the effects on contraceptive use and unintended pregnancy of paid promotional messages for contraceptives that are directed at sexually active adolescents.

Goal 2: Provide alternatives to adolescent childbearing and parenting. The panel believes that prevention of pregnancy through abstinence or contraception is far preferable to unintended pregnancy among teenagers. . . . Nevertheless, when prevention fails, early parenthood is not the only available course. For young people who are unwilling to give birth or unable or unwilling to assume the responsibilities of parenthood, two alternatives exist—abortion and adoption. . . . [The panel believes the following:]

- At each step along the path from sexual initiation to parenting—regardless of whether one might wish that that step had not been reached—the girl or woman should be treated with the same dignity, confidentiality, kindness and excellence of health care that are due any patient.
- There is no scientific basis for restricting the availability of abortion [in the case of] adolescents. Evidence shows that to require minor teenagers to seek parental consent often causes them to delay abortions, with attendant health risks. On this basis, the panel concludes that minor adolescents should be encouraged, but not required, to involve their parents and partners in the decision-making process.
- There should be no compromise in the medical and personal supportive care for the 400,000 adolescents who have an abortion each year. For those adolescents who choose to terminate their pregnancy, abortion services should include both decision counseling and contraceptive counseling. . . .
- Relevant public agencies, in cooperation with the private sector, [should] explore ways of strengthening adoption services, including (1) improved decision counseling for pregnant teenagers and (2) development of effective models for providing comprehensive care to pregnant girls who choose adoption as an alternative to parenthood.

Goal 3: Promote positive social, economic, health and developmental outcomes for adolescent parents and their children. . . . Several strategies can assist in achieving this goal: . . . promote healthy birth outcomes and support the physical health of young mothers and their babies; . . . prevent subsequent untimely and unintended births; . . . ensure the economic well-being of the teenage family; . . . enhance life options for adolescent parents; . . . [and] promote the social, emotional and intellectual development of the children of adolescent parents. . . . [To implement these strategies, the panel recommends the following:]

- . . . Support [should continue] for the provision of appropriate health and nutrition services, including prenatal, labor and delivery care for pregnant adolescents and regular and emergency pediatric care for the children of teenage mothers through Medicaid; the Early and Periodic Screening, Diagnosis and Treatment Program; and other federal and state maternal and child health programs. Bureaucratic barriers that prevent teenagers from receiving early, regular and appropriate care for themselves and their children should be minimized. . . .
- Contraceptive services should be available and accessible to adolescent parents at low or no cost. . . . Service providers should strengthen their programs by (1) enhancing their outreach efforts to encourage early use of contraceptive methods; (2) developing intensive individualized counseling and care techniques to encourage compliance; and (3) enhancing their follow-up procedures to track contraceptive use. . . .
- A broad array of special education programs and services for pregnant and parenting teenagers [should] be developed and implemented to assist [adolescent parents] in completing their education.
- Efforts should be continued to strengthen and expand age-appropriate employment programs for pregnant girls and teenage parents, both male and female.
- Support [should] be provided for the development, implementation and evaluation of model child-care programs that are targeted to the needs of teenage parents. Schools and other community organizations should place high priority on establishing and maintaining these services for the children of adolescents.
- Public and voluntary community agencies [should] explore ways of developing and evaluating case management capabilities to help adolescent parents obtain the necessary supports and services. . . .
- Parenting education for teenage parents, especially those from severely disadvantaged backgrounds, [should] receive special attention and emphasis. Schools and other community organizations should place high priority on the development, implementation and evaluation of these programs. . . .

[The panel also made several recommendations regarding program evaluation, data collection and research, including the following:]

- Evaluation to measure the costs, effects and effectiveness of service programs [should] be an essential component of intervention strategies. Federal and state-level funding agencies should be urged to set aside adequate support for evaluation research, and the research community should be urged to take a more active role in designing and implementing these studies. . . .
- Data systems that monitor fertility and fertility-related behaviors should be maintained and strengthened. Such data are essential for understanding trends and correlates of adolescent sexual activity, contraceptive use, pregnancy, abortion and childbearing and as a basis for policy and program development. Fiscal cutbacks that affect ongoing data collection programs could seriously damage the quality and availability of these data systems. . . .
- . . . A broad-based research program on adolescent sexuality and fertility [should continue to be supported] to enhance understanding of the causes and consequences of these behaviors and to inform policy and program development. . . .
- Federal funding agencies, private foundations and researchers [should] cooperate in designing, implementing and evaluating experimental approaches for pregnancy prevention among high-risk adolescents and for improving the well-being of teenage parents and their children.

The Role of Congress

By Mickey Leland

Risking the Future provides the most comprehensive and credible overview to date of the teenage pregnancy issue. Not only does the report dispel a number of myths about adolescent pregnancy but it also contains many valuable recommendations for policy initiatives that Congress would do well to act upon.

The report shows that while the overall birthrate among American teenagers has declined in the 1980s, the birthrate among unmarried teenagers is increasing. The harsh reality of the effects of teenage pregnancy and childbearing on poor teenagers is at the heart of my concern with this issue. Although teenage pregnancy is not a problem restricted to inner-city minorities, members of poor minority groups are considerably more likely than others to carry a pregnancy to term and to keep the infant. These young people are particularly vulnerable to the adverse consequences of teenage childbearing and need help at least as much as those who seek to prevent pregnancy. Furthermore, as the report shows, some of the problems associated with early childbearing can be mitigated by programs directed at those at risk. For example:

- Prenatal care can increase the probability of healthy outcomes for both the young mother and her baby.
- Nutrition services can help to reduce the incidence of low-birth-weight babies.
- Parenting education can improve knowledge of infant and child development and child care and can prevent early developmental delays.
- Child-care services can facilitate the return of young mothers to school or their entry into the job market.
- Alternative school programs can help pregnant and parenting teenagers stay in school and can boost their academic achievement.
- Ready availability of free or low-cost contraceptive services can increase the use of birth control.

Unfortunately, funding for virtually all federal domestic social programs—including Medicaid, Aid to Families with Dependent Children (AFDC) and the Women, Infants and Children Supplemental Food Program—has declined drastically in real terms since 1980. Funding cuts have affected needy teenagers just as they have affected poor adults. Although efforts to gain increased funding for these programs are a high priority, there are a number of other actions aimed at improving the lives of impoverished teenage parents and their infants that can be undertaken by federal, state and local governments.

Some of these actions can be accom-

The Honorable Mickey Leland is a Democratic congressman from Texas.

plished at an administrative level. For example, most teenagers are not presently eligible for AFDC and Medicaid unless their parents are eligible. Clearly, teenagers should be eligible for such assistance in their own right.

On a legislative level, the federal government needs to address the serious shortage of child-care programs, particularly for children under the age of three. If teenage parents who have children under school-age are to complete their education or hold down a job, they need assistance in caring for those children.

There is, however, no consensus among members of Congress on the role government should play in seeking solutions to the teenage pregnancy problem. Some contend that pregnancy, childbearing and abortion among adolescent women are family problems that can only be dealt with by the family. Proponents of this argument believe that government support for sex education, contraception and abortion invites a further weakening of family ties and fosters promiscuity. If the government is to play any role at all, they believe, it should be to exhort teenagers to chastity, to bar contraception and abortion and to oblige young women who become pregnant to carry the pregnancy to term. These principles are embodied in the Adolescent Family Life Act, a controversial piece of legislation passed by Congress in 1981.

On the other side of the issue are those of us who believe that government cannot legislate morality, but can and should deal realistically with a problem that has such a profound effect on both individuals and on society. While we recognize that government alone cannot solve this complex problem, we believe that it can help young people avoid some of the adverse consequences of early childbearing. Some of us in Congress are currently working on legislation to improve existing programs for the prevention of adolescent pregnancy and to provide care for young people who become parents. This legislation will provide many of the services critical to achieving healthy birth outcomes and economic self-sufficiency as well as information and education programs to enable adolescent parents to make responsible choices about their life options and about sexuality, pregnancy and parenthood.

Programs that provide comprehensive prenatal and postpartum care, well-child care, family planning and educational and vocational counseling tailored to the needs of young parents must be made available to those who are struggling to lead successful lives in an already difficult world.

Numbers Versus Principles

By James R. Kelly

The National Academy of Sciences (NAS) report acknowledges that the "period of significant increase in teenage sexual activity during the 1970s was paralleled by a significant growth in the availability of contraceptive services for both adult women and adolescents" [p. 165], but it adds that "whether there is a causal connection or whether both trends were responses to the same changing social context and mores is unclear" and concludes that "more research is needed on this issue." However, only one page of the NAS report deals with the fear that the provision of contraceptive services by such a formative public institution as the school (as opposed to provision by private and less official sources) will legitimate early sexual activity.

In that section, two studies are cited, one claiming that increased spending on contraceptive services has led to increased levels of sexual activity, and the other finding no such association, at least no association that could be measured apart from other factors, such as poverty and region.

In other sections of the report, questions of culture, and even of moral culture (though the term is not used), abound. We are told about the importance of "social factors that mediate" the sexual decisions of teenagers. For example, we learn that blacks who attend integrated schools are more likely than blacks of the same socioeconomic background who attend segregated schools to have pregnancy rates close to those of whites. The significance of "peer group culture" for teenage sexual behavior is stressed (but not in the context of making condoms easily available in the schools and in other places where young men congregate). Studies are cited that show that the length of time a teenager's family has lived in poverty affects the adolescent's sexual behavior.

Given this frequent recognition of the influence of social context, or mediating factors on teenage sexual behavior, the panelists' relative inattention to the issue of how the active promotion of contraceptive services by the schools might itself become a mediating factor is surprising. Their frequent acknowledgment of how little is conclusively known about teenage sexual behavior makes this omission even odder.

Toward the end of the report, the panel makes an especially pertinent observation: "Yet we know very little about the intended and unintended, direct and indirect effects of society and [of] public policy changes on decisions, such as the decision to initiate sexual activity, and on the outcomes of such choices for individuals, families, communities and society" [p. 248]. The only thing that does, on the face of it, seem certain is that if teenagers who are sexually active use contraceptives, they are less likely to get pregnant; if they get pregnant and are successfully encouraged to have an abortion, there will be no birth. Despite the panel's otherwise careful appraisal of the available data, its policy suggestions about contraceptive and abortion services for teenagers are, in the end, entirely structured around this single technological dimension.

The NAS report is, however, far from doctrinaire. It discusses the many types of pregnancy prevention efforts among teenagers that are more congruent with a traditional moral ethic—programs broadly classified as the "enhance life options" and the "delay sexual initiation" approaches. But for many reasons, these programs have been studied less and there are fewer reliable data about them with which to judge their effectiveness. These more comprehensive programs are more difficult to implement and are harder to evaluate empirically than are the programs with a narrower focus, because they are based on the assumption that much (though not all) of

(Continued on page 124)

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(Continued from page 122)

teenage sexual behavior and contraceptive failure results not from lack of knowledge about sex, but from lack of hope about life itself. Thus, such programs frequently involve efforts at employment training and academic improvement for young people. An interesting question is why foundation monies are given so lavishly to implement and study programs that rely on the single technological dimension of contraceptive instruction, and why so few monies are given to fund and study programs that stress self-discipline or require the promotion of social policies linked to the preparation of teenagers for work and the provision of employment.

In truth, there is little in this study that will encourage anybody, of whatever moral point of view, about the prospects of "solving" the problem of teenage sexual behavior. The data do not provide rigorous grounds for the policy recommendations promoted by family planning and population experts. But neither are there convincing data that show the efficacy of programs more congenial to moral traditionalists. The only certainty is that in any one year, many teenagers will experience coitus, nearly half a million (mostly unmarried, and about half under the age of 18) will give birth and about 400,000 will have abortions.

It seems inevitable that the immediate result of the NAS study will be the contention that empirical studies have now validated the wisdom of the vigorous promotion of contraceptive services to teenagers by all available means, including school-based clinics. The policy argument will be framed to make it appear that while moral traditionalists have their sectarian principles, promoters of contraceptive services have the data. And this is partly true. There are few available studies showing the efficacy of programs congruent with a traditional ethic of sexuality. Besides, programs such as these, if they are realistically pursued, require structural reforms that deal with hopelessness and thus with poverty—dimensions of the problem that not all moral traditionalists are willing to confront.

In terms of the public policy debate, as framed by the population policy professionals consulted by the NAS, it may be the case that moral traditionalists now possess the "radical" point of view and must now think about a "radical" economic policy to implement their moral convictions. Fighting the opinions about teenage sex held by most family planning professionals may also require fighting mainstream thinking about poverty.

This development is not much in evidence, save among those who accept the "consistent ethic of life" approach formulated by Cardinal Joseph L. Bernardin of Chicago and others. What is more likely to happen is that while no one save "policy experts" is calling for them now, school clinics that dispense contraceptives to the poverty classes will become a familiar part of our institutional life. In public policy debates about social problems, numbers (especially budget numbers) usually defeat principles. In time, I suspect, the part of the budget earmarked for school-based contraceptive services will be unquestioned and uncut by liberals and conservatives alike, with the dispute about sexual morality quietly absorbed by the willingness of most Americans to agree that the poor are the chief causes of their own poverty. Perhaps American society needs more, rather than less, contentious pluralism than it already has.

Changing Motivation

By Sidney Callahan

The key to resolving the problems associated with teenage pregnancy and parenthood in the United States is to change motivation in order to change behavior. The approach to adolescent pregnancy adopted by the NAS panelists is misguided because it ignores such basic positive human motivations as sexual romantic love, altruism and the intrinsic joy and meaningfulness of reproducing human life. Risk-taking and the giving of one's self for love are highly prized values in American culture. Certainly adolescent culture in this century has been preoccupied with romantic love. And as the epidemic of infertility spreads in the society, we see more and more value placed on children and reproductive ability.

We can better motivate young people to assume responsibility for their reproductive behavior by deepening and extending their existing positive motivations rather than by emphasizing the negative consequences of irresponsibility. If young men and women are to practice abstinence *or* use contraceptives effectively, they must put the good of their potential child ahead of their immediate sexual desires. Young men have to care for their sexual partners, and young women must care for the potential fathers and their potential babies. A new baby must be viewed as a new human being with its own rights and dignity—a separate person in need of prolonged nurturing.

The pursuit of degrees, careers and money should not be presented simply as self-enhancing alternatives to love and childbearing, but as ways of giving more fully to one's partner and one's child. Neutral, safety-first approaches, or interventions that rely on fear and prudence as motivating factors, do not seem to activate behavioral change. Sex education may have to be inspiring and emotionally compelling in order to work.

Although making contraception available to unmarried teenagers symbolically sanctions premarital sexuality and infringes on parental authority, it also implies the need for individual responsibility. It is doubtful, however, that school-based health clinics that prescribe contraceptives can avoid the dangers of covert coercion by school personnel. Furthermore, most schools already have a hard enough time providing basic education—they do not need the added burden of getting into the family planning business. The report's recommendation to give unmarried teenagers access to contraception outside of the schools seems to be the lesser of two evils.

Abortion, however, is an unacceptable alternative to childbearing. Not only is it ethically wrong but it also sabotages responsible reproductive behavior. By "undoing" a pregnancy, abortion denies the reality that irresponsible sexual behavior has serious consequences. Moreover, rather than fostering self-esteem, abortion creates a sense of failure—the failure of not being able to bring new life into the world and the failure of not having the personal

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and material resources to avoid killing one's own offspring. Extinguishing the life of one's fetus can hardly be turned into an act of altruism and is not likely to activate later prenatal and parental nurturing.

On the other hand, carrying a pregnancy to term and putting the infant up for adoption can be an altruistic act that benefits the baby, the adoptive parents and the biological mother. Giving up one's baby is a true sacrifice in the baby's best interest and brings happiness to those unable to have their own child.

Ideally, residential programs for pregnant adolescents should be revived and developed. The period of pregnancy could be a time of intensive education and personal psychological preparation for adult life. If some young women chose to keep their babies, they would be better prepared to support and care for them. If federal and private groups can support the Job Corps, drug treatment programs, basic training for the military and so on, surely the far more important needs of adolescent women can be met. The adoption alternative is waiting for a creative renewal.

In conclusion, I can endorse many of the recommendations made in the NAS report, with the notable exception of considering nontherapeutic abortion an acceptable option for pregnancy resolution. Allowing adolescent girls to abort the human lives they have conceived would, in my judgment, be morally evil, no matter how expedient it might appear to be. Moreover, reliance on abortion as a solution to problem pregnancies could compromise other goals outlined in the report. Encouraging adoption as an alternative to adolescent parenthood would be a much more commendable strategy.

The Adoption Alternative

By William Pierce

All of the issues relating to adolescent sexuality, pregnancy, childbearing and parenting are sensitive and controversial. Addressing these issues in a complete and competent manner cannot be done without full consideration of the adoption alternative. Yet, although the NAS report contains some useful recommendations pertaining to adoption, on the whole its coverage of the adoption issue is woefully inadequate.

The report consistently mentions adoption as an alternative to adolescent parenthood, but it usually characterizes this option as a last resort. While pointing out that adoption should be available to teenagers "who choose to continue their pregnancies yet are unable or unwilling to assume the responsibilities of parenting" [p. 6], the report neither endorses nor encourages adoption as a course of action that might be in the best interests of the child and the teenage parents.

One of the report's major shortcomings is its scant attention to current research and literature on adoption. For example, although the report underscores the need to coordinate pregnancy counseling and adoption services, it fails to mention the program directed by Edmund V. Mech of the University of Illinois, which has been looking into the problem of integrating these services since 1982. This program is currently conducting a demonstration project to test the effectiveness of counseling to communicate information about adoption to pregnant teenagers in public health settings.

The panelists are not aware of "any careful assessment of how the auspices of service delivery affect decisions concerning pregnancy outcome for different clients" [p. 174]. However, had they researched the literature on adoption carefully, they would have discovered that Mech's interviews with 131 counselors from 94 health and social service agencies led him to conclude that counselors in health-oriented settings are less likely to view adoption as a positive option than are those in social service agency settings, and the fact that adolescents do not tend to choose the adoption alternative very often reinforces among counselors the expectation that adolescent clients will resist this option.[2] Consequently, he says, counselors tend to short-circuit discussion of adoption.

The NAS report also claims that "there is virtually no research on factors affecting the decision of unmarried adolescents to place their children for adoption" [p. 116]. However, one of the basic texts on adoption (not mentioned in the reference section) cites no fewer than six research projects devoted to determining the characteristics that differentiate mothers who keep their children from those who surrender their children.[3]

The report's recommendations concerning pregnancy counseling, referral and postplacement services for teenagers who give up their babies for adoption rightfully emphasize the importance of providing "objective, nonjudgmental counseling to inform [teenagers] of all their options for pregnancy resolution and the associated risks and benefits of each—abortion, parenthood and adoption" [p. 280]. Unfortunately, this does not always occur. A study carried out by the Child Welfare League of America found that over one-third of independent adoption facilitators* never discuss alternatives to adoption with the biological mother, and an additional one-third only discuss certain alternatives.[4] The study concluded that the primary concern of some facilitators appears to be the desires of the adoptive parents, not the well-being of the biological mother.

Clearly, independent adoption facilitators either should be required to provide adequate counseling and postplacement services or should be eliminated from consideration as service providers. Fortunately, the current policy of organizations as varied as Planned Parenthood and Birthright is to refer pregnant adolescents interested in adoption to voluntary or public social service agencies rather than to independent facilitators.

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*These are individuals, usually doctors or lawyers, who are not affiliated with a licensed adoption ageency but who arrange for the placement of infants with adoptive parents.

DIGEST

Pill Appears to Provide Long-Term Protection Against Endometrial Cancer and Ovarian Cancer

Oral contraceptive use, particularly the use of combination pills, reduces women's risk of ovarian and endometrial cancer by at least 40 percent. The protective effect against ovarian cancer appears among women who have used the pill for as little as three months, while that against endometrial cancer becomes apparent after one year of use, according to two analyses of data from the Cancer and Steroid Hormone Study conducted by the Centers for Disease Control and the National Institute of Child Health and Human Development.[1] The studies found that the protective effect against these two types of cancer persists for at least 15 years after pill use ends, and it occurs regardless of the histologic form of cancer or the specific formulation of the oral contraceptive.

Cancer patients in both analyses consisted of all women aged 20–54 who developed ovarian or endometrial cancer between December 1, 1980, and December 31, 1982, in eight reporting areas: Atlanta, Connecticut, Detroit, Iowa, New Mexico, San Francisco, Seattle and four urban counties of Utah. Women who served as controls, also aged 20–54, were selected through a process of random telephoning of households located in the same geographic areas in which the cancer patients lived. Both patients and controls were interviewed in their homes; interviewers aided the acccurate recall of contraceptive use by using a calendar of major events in the woman's life and by showing her color photographs of contraceptive packaging. A panel of pathologists reviewed the histology slides and reports of patients from six of the eight reporting areas to confirm the diagnoses.

Ovarian Cancer

Researchers were able to interview 71 percent of the 816 women in the eight reporting areas who had developed ovarian cancer during the study period. Patients whose diagnoses could not be confirmed, who had nonepithelial ovarian cancer or who had used oral contraceptives for fewer than three consecutive months were excluded, leaving 448 cases for analysis. Of the 5,698 women selected as controls, 83 percent were interviewed. After the exclusion of women whose ovaries had been removed, who had used oral contraceptives for fewer than three consecutive months or for whom data on pill use were incomplete, 3,975 controls remained in the study.

The investigators considered the following possible confounding factors: age, race, education, income, parity, breastfeeding, menopausal status, frequency of pelvic examinations, adiposity index, residence and history of infertility, smoking and alcohol use. Since parity and age were found to be the only factors that made any appreciable difference, these were the only two that were controlled for in the final calculation of the risk estimates.

Women who had used oral contraceptives for at least three consecutive months had a relative risk of developing epithelial ovarian cancer of 0.6, compared with women who had never used the pill; the reduced risk was statistically significant. The relative risk remained about the same through five years of pill use, was reduced to 0.4 among women who had used the pill for 5–9 years, and dropped to 0.2 among those who had used it for 10 or more years.

Among all users, the reduction in risk only became statistically significant 10 or more years after the time of first use. However, the length of time before a favorable effect was noticed also depended on how long the woman had been a pill user; for example, women who had used the pill for five or more years experienced a statistically significant reduction in risk within 5–9 years since first use. The protective effect was unaltered by the length of time since last use. Compared with nonusers, women who had last used the pill 15 or more years earlier had a significantly reduced relative risk of 0.5. There was no association between age at first use and relative risk once the results were controlled for length of time since first use.

Compared with women who had never used oral contraceptives, women who had used a combination pill had a relative risk of developing epithelial ovarian cancer of 0.5, a statistically significant reduction. Women who had used sequential pills and progestin-only pills also had a reduced risk of ovarian cancer, but the number of cases was small, and the results were not statistically significant. The researchers examined 11 formulations of combination pills and found that all 11 produced a reduced risk of ovarian cancer; seven of these formulations achieved statistically significant reductions.

The negative association between oral contraceptive use and the likelihood of developing epithelial ovarian cancer held regardless of whether the tumor was classified as borderline or malignant and regardless of the classification into four major histologic subtypes of tumor. The investigators found a protective effect among ever-users of the pill with parity levels from zero through four; their relative risks ranged from 0.4 to 0.7. Among women who had had five or more children, the pill conferred no additional protective effect beyond that conferred by parity.

Controlling for infertility and subfecundity (since women with these conditions are at increased risk of developing ovarian cancer and may be less likely to use contraceptives) did not alter the estimates of the protective effect of pill use. The researchers also analyzed data on women diagnosed as having nonepithelial ovarian cancer, but because of the relatively small number of cases, especially when these were divided into histologic subtypes, they were unable to determine an association between nonepithelial ovarian cancer and pill use.

Endometrial Cancer

Of the 905 women who were diagnosed as having endometrial cancer, 606 were interviewed, and histologic information and slides were retrieved for 575. The panel of pathologists agreed that 437 patients met the criteria for a primary epithelial malignancy of the endometrium. Of the 5,209 women selected as controls, 4,352 were interviewed. Following the exclusion of controls who had had a dilatation and curettage of unknown outcome or a hysterectomy and of both cases and controls whose information on pill use was incomplete, 433 patients and 3,191 controls were left for analysis. The investigators examined 15 confounding factors, and the relative risks were all adjusted for age, as well as any other factors found to affect a particular analysis appreciably.

Compared with women who had never used the pill, women who had used only combination pills had a relative risk of developing endometrial cancer of 0.5, a statistically significant reduction. The small number of women who had used progestin-only and sequential pills precluded the accurate estimation of relative risks for these users. The 27 cancer patients and 158 controls who had ever used sequential or progestin-only pills were excluded from the remaining analyses.

There was no reduction in the risk of endometrial cancer among women who had used combination pills for less than one year, but women who had used them for 12–23 months had a risk of 0.6 relative to nonusers. The risk dropped to 0.4 at 24 or more months of pill use, and all reductions were statistically significant. The protective effect among women who had used the pill for one year or more was apparent regardless of whether the woman had first used oral contraceptives less than 10 years or more than 20 years before the interview. The length of time since last use, including pill use that had occurred 15 or more years earlier, had no effect on the association, nor did the age at which a woman first used the pill. Adjusting for subfecundity had no effect on the overall results either.

Only formulations of combination pills that had been used by at least six patients and controls were analyzed separately; all eight of these provided a reduced risk of cancer, and five produced a statistically significant reduction. Statistically significant relative risks of 0.2, 0.3 and 0.6 were found among ever-users of the pill of parities 0, 1–2 and 3–4, respectively. The reduced risk among women with five or more children was not significant.

Three histologic subtypes of epithelial endometrial cancer were analyzed: adenocarcinoma, adenoacanthoma and adenosquamous carcinoma. Pill use of 12 or more months' duration was found to provide a protective effect against all three.

Overall Comments

Many of the women in the two studies had used pills containing higher doses of estrogen than are found in most pill formulations used today. However, all of the combination pills studied produced a decreased risk of cancer for women using them, and there was no pattern of variation in relative risk associated with differing levels of estrogen or progestin.

In addition, both of the analyses were limited to women 54 or younger, because very few older women have ever used the pill. The majority of cases of ovarian and endometrial cancer, however, are diagnosed after age 55. Because the data provide no evidence that the protective effect of pill use diminishes, even many years after last use, protection may persist into older ages. Therefore, the researchers hope that as women who have used oral contraceptives reach the ages at which they are at highest risk, a noticeable decline in the incidence of ovarian and endometrial cancer will result.

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Older White Women Run No Increased Risk Of Poor Birth Outcomes

Among white women with no history of infertility or miscarriage, those who delay childbearing until after the age of 29 are no more likely than younger women to have low-birth-weight babies or preterm deliveries, according to a recent study carried out at Yale–New Haven Hospital.[1] The analysis shows that among primiparous white women, an infant's early gestational age is the only significant predictor of low birth weight, and a woman's smoking during pregnancy is the only significant predictor of preterm delivery.

The analysis focused on 1,141 primiparous white women without any history of infertility or miscarriage who made a first prenatal visit between May 1980 and March 1982. Of these women, 225 were aged 30 and over and 916 were under age 30.

In home interviews conducted during the prenatal period, interviewers obtained from the women pregnancy and medical histories and information on their previous contraceptive practice. They also collected data on the women's exposure to possible risk factors associated with low birth weight and preterm delivery, including maternal weight change and smoking patterns during pregnancy. Women who had had prior live births, stillbirths or ectopic pregnancies were excluded from the analysis. Data on pregnancy outcomes were taken from hospital medical charts. Infants weighing less than 2,500 g at birth were considered low-birth-weight babies, and preterm delivery was defined as delivery at less than 37 weeks' gestational age.

The researchers carried out a regression analysis to determine the significance of a woman's age, marital status and educational level in predicting the likelihood of having a preterm delivery or a low-birth-weight baby. The analysis also assessed the influence of smoking, prior medical conditions and the infant's sex.

Findings

The average age of the women giving birth after the age of 29 was 32, whereas that of the women aged 29 and under at first birth was 24. Women in the older age-group were better educated, more likely to be married and less likely to have smoked during pregnancy than were women in the younger age-group; the differences were significant for all three factors ($p<0.001$).

Compared with the younger women, those in the older age-group had a relative risk (RR) of having a low-birth-weight baby of 1.07, but the increased risk was not statistically significant. Older and younger women ran almost identical risks of having a preterm delivery (RRs=1.01 and 1.00, respectively). The lack of association between advancing age and increased risk of low birth weight and preterm delivery held true even after the researchers eliminated women under the age of 20 (known to be at high risk for these outcomes).

Moreover, when the investigators subdivided the older age-group into women aged 35 and over and those aged 30–34, they found that neither group had a significantly higher risk of having a low-birth-weight infant than did women under age 30. However, women aged 35 and older were two times more likely to have a preterm delivery than were women under age 30, although this increased risk was not statistically significant.

Smoking during pregnancy was the only variable found to be associated with both age at pregnancy and pregnancy outcome: Thirty-three percent of the younger women had smoked during pregnancy, compared with only 21 percent of the older women; and 42 percent of the women who had had low-birth-weight babies had smoked during pregnancy, compared with 30 percent of the women who had given birth to normal-weight babies. Smokers of all ages were almost twice as likely as nonsmokers to have a low-birth-weight baby (RR=1.9) or a preterm delivery (RR=1.8). However, differences in smoking status between the two age-groups do not appear to have masked different rates of low birth weight or preterm delivery: After smoking status was controlled for, the relative risk of having a low-birth-weight infant among older women, compared with that among younger women, was 1.15; and the relative risk of preterm delivery was 1.10. Neither of these risk levels was statistically significant.

A regression analysis confirmed the findings of the risk estimates: Early gestational age was found to be the only statistically significant predictor of low birth weight, and smoking during pregnancy, the only significant predictor of preterm delivery. The investigators suggest that other studies that did find an association between delayed childbearing and increased risk of low birth weight and preterm delivery may have reflected risks associated with a history of poor pregnancy outcomes rather than with advancing maternal age. They believe that the results of the present study suggest that aging alone does not significantly increase a woman's risk of experiencing these adverse pregnancy outcomes. However, the researchers note, it is possible that any increased risks of low birth weight and preterm delivery associated with increasing age are offset by greater use of prenatal care services and by the other characteristics of older women that put them at lower risk.

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Scholars Disagree on Economic, Social Impact Of Continued Low Fertility in Developed World

By Michael Klitsch

The low levels of fertility now found throughout the developed world are here to stay, according to some social scientists; others argue, however, that fertility rates could rise in the future. Continued below-replacement fertility could cause severe economic problems in countries where a diminishing labor force will be assuming the support of growing numbers of retirees, but some economists suggest that societies may in fact adjust well to low fertility, as increased private retirement savings allow social security burdens to be eased. And while some critics warn that the concomitant aging of societies will probably lead to a dramatic drop in innovation and creativity, as developed countries cede economic and cultural dominance to large developing nations, others contend that the increasing number of older, experienced workers and administrators may help developed countries produce more efficiently than ever before.

These are some of the vastly differing positions taken by demographers and sociologists trying to come to grips with the implications of low fertility. The current below-replacement fertility rates observed in almost all developed nations may be an incontrovertible fact, but no one knows what their impact will be, or even whether they will continue. A seminar on the causes and consequences of below-replacement fertility in developed nations was held at the Hoover Institution in November 1985; the papers that were presented and discussed, recently published as a supplement to *Population and Development Review*, illustrate the diversity of views within the scholarly community concerning the ultimate impact of low fertility.[1] The editors of the volume—Kingsley Davis, Mikhail S. Bernstam and Rita Ricardo-Campbell—comment that attempting to determine the impact of continued low fertility is "audacious," in part because fertility levels that do not allow for population replacement are such a novel phenomenon and in part because judging their impact requires a leap into the future, "a time that social scientists find baffling."[2]

Low Fertility

Of 25 European countries for which 1984 data were available, only four had total fertility rates (TFRs) above replacement level—Ireland (2.58 lifetime births per woman), Malta (2.20), Poland (2.37) and the Soviet Union (2.37).[3] One country, Czechoslovakia, had a TFR of 2.07, approximately replacement level. In the rest of Europe, fertility rates were below replacement, and in a number of countries rates had fallen far beneath that level. In eight, the TFR was less than 1.6 births per woman—Austria (1.52), Belgium (1.52), Denmark (1.40), Italy (1.50), Luxembourg (1.43), the Netherlands (1.49), Switzerland (1.53) and West Germany (1.29). Iceland's TFR had been above replacement as recently as 1983 (2.24), but by 1985 it had dropped to 1.93 lifetime births per woman. In addition, of six developed countries outside Europe (Australia, Canada, Israel, Japan, New Zealand and the United States), only Israel had a fertility rate above replacement level (3.14).[4] Other data show that four European nations—Austria, Denmark, Hungary and West Germany—had birthrates in 1985 that were lower than their death rates, and thus were experiencing natural decrease rather than natural increase.[5]

In many developed countries, fertility rates began their precipitous declines around 1965, when TFRs in most of Western Europe were above 2.50 and those in Eastern Europe were closer to replacement level. However, since that time, fertility rates in Western Europe have fallen to extremely low levels. For example, the TFR in the north central region of Italy, which had a population of about 36 million in 1983, was 1.28 lifetime births per woman, the lowest fertility rate ever seen for such a large population.[6] Paul Demeny, vice president of The Population Council, points out that the West German population is now believed to be shrinking at an annual rate of 1.7 percent; if maintained for 200 years, such a rate would produce a population one-thirtieth its original size.[7]

Because total fertility rates may not give a true indication of the level of reproduction in a country, demographer Jean Bourgeois-Pichat projected cohort fertility rates in a number of developed countries for women born in 1956 or earlier.[8] (It was assumed that women in their 30s will bear few additional children.) In northern, western and southern Europe, projected fertility rates for the 1956 birth cohort ranged from

1.48 lifetime births in West Germany to 2.65 in Ireland. The extent of fertility decline also varied. In the Netherlands, for example, fertility has fallen by 47 percent between the 1917 and 1956 cohorts, and in the United States, by 44 percent between the 1932 and 1956 cohorts. Denmark and Portugal have experienced 32 percent declines in fertility between the 1931 and 1956 cohorts. On the other hand, fertility has fallen by only 15 percent in Finland between the 1921 and 1956 cohorts.

Causes of the Decline

According to the experts who participated in the seminar, fertility decline in the developed world can be related to a number of social, economic and demographic trends. First, the age at which men and women marry has risen substantially in recent years. Demographer Charles F. Westoff points out that in 1985, the proportion of 20–24-year-old U.S. women who were not married (58 percent) was comparable to the highest level ever seen before (around the turn of the century).[9] Thus, in some ways, trends in marriage appear to have resumed the pattern followed in the late 19th and early 20th centuries, when people married later, on average, and sizable proportions of men and women never married at all. However, Westoff observes that there are many differences between then and now: At the turn of the century, levels of premarital sexual intercourse were almost certainly very low compared with those of recent years. In addition, unmarried persons generally lived alone in the past, whereas there is now a great deal of nonmarital cohabitation.

Bourgeois-Pichat demonstrates that at least in some countries, much of the decline in marriage was related to the gradual disappearance of so-called dependent marriages—those precipitated by a premarital pregnancy. In Denmark, for example, the proportion of 20–24-year-olds who were unmarried rose from 45 percent in 1970 to 78 percent in 1982; similarly, the proportion of 25–29-year-olds who had never married rose from 14 percent in 1970 to 45 percent in 1984. The demographer estimates that 93 percent of the decline in marriage in Denmark between 1972 and 1983 can be explained by a decrease in dependent marriages. Elsewhere, the proportion of decline in marriage explained by the disappearance of dependent marriages ranged from 68 percent in West Germany between 1968 and 1983 to 34 percent in Sweden between 1965 and 1983.

A rapid rise in divorce rates has also helped reduce fertility, according to Kingsley Davis, a sociologist and fellow at the Hoover Institution.[10] As a result of high divorce rates, couples now spend less time in the married state: One study has shown that divorce decreased the average length of time spent in a first marriage by almost 16 years (38 percent) in 1975. Since marriages are less stable than in years past, couples may postpone the discussion and planning that are an essential part of the decision to bear children. In addition, the threat of divorce diminishes a woman's financial security and may increase her need to work outside the home and to seek more education; both of these factors can also serve to reduce fertility.

Another important influence on fertility rates has been the growing participation of married women in the labor force. Fifty-four percent of married women in the United States were in the labor force in 1984. The number of female blue-collar workers rose by 50 percent between 1960 and 1980, and the number of women in white-collar jobs rose by 133 percent in the same period. According to Davis, high levels of labor-force participation motivate women to get more education, to postpone marriage and, once married, to postpone childbearing: "In . . . present-day industrial society, the wife's role in economic production makes low fertility necessary. . . . For husband and wife, . . . there is nothing in the modern workplace that encourages either marriage or reproduction."

One reason why women's participation in the work force inhibits fertility, argues demographer Nathan Keyfitz, is that their time is worth more than it was in the past, so childbearing is seen as limiting their opportunities to a greater degree.[11] As a result, "the office may well be preferable hour for hour to looking after children, . . . even if the latter could be confined to an eight-hour day, and even if childrearing were paid the same wage as office work."

Another reason is that there has been a change in how the child is viewed as a commodity. Keyfitz contends that although a child is obviously a very valuable entity, the child no longer can be considered to belong to the parents. The time and money spent by parents in childrearing may now seem less like an investment than a sacrifice. Children become fairly independent at a very young age in industrial societies, and parental influence over a child's development may be limited as a result. Furthermore, children are not expected to provide for their parents in later years, given the existence of social security. Thus, parents may receive fewer benefits from having children than in years past.

Societal Changes

The social implications of low fertility are related primarily to its effects on population growth and the age composition of the population. These can differ greatly, depending on the assumptions about factors such as mortality and immigration. For example, demographer Ansley Coale calculated fertility projections for the United States by assuming that mortality rates would continue to be very low and that at birth, a person would be expected to live for 80 years.[12] In the absence of immigration, a TFR of 2.07 births per woman would guarantee population replacement and would lead, by about the year 2030, to a stable population approximately 25 percent greater than the size of the 1980 U.S. population.

However, given that fertility is now well below replacement level in the United States, Coale studied the impact of several alternative patterns of childbearing and immigration. In the case of a TFR of 1.8 births per woman and no immigration, the size of the population would stabilize at about 1.1 times its 1980 level by the year 2010 and begin a steady decline soon afterward; by the year 2100, the U.S. population would be about 75 percent of its current size. In contrast, the lowest population projection—a TFR of 1.4—would lead to a rapid, substantial decline in population size. Even with 700,000 immigrants annually, the U.S. population would stabilize by about the year 2000 and decline to only 63 percent of its current size by the year 2100. In fact, with a TFR of 1.4, an annual influx of 1.6 million immigrants would be needed for the U.S. population in the year 2100 to equal the population in 1980.

According to Geoffrey McNicoll, a demographer with The Population Council, "demographic marginalization" is a prospect that haunts low-fertility countries,[13] and at least one recent book warns that because of low fertility and population decline, Western nations may face the loss of a good deal of their international influence.[14] There are now approximately three residents of developing countries for every person living in a developed country; according to medium-variant projections made by the United Nations, that ratio will approach 5:1 in 40 years. McNicoll argues, however, that "whether the populous, so to speak, will inherit the earth . . . depends heavily . . . on whether the current technological (and related military) dominance of today's developed countries persists." He points out that "the present international system is one in which demographic weights play little part."

DIGEST

However, according to Coale, the greatly altered age distribution of a population, not simply its size, would be the most striking result of continued low fertility. He points out that the "most conspicuous features of low-fertility age distributions are the very high proportions above 65 and above 80, proportions that will be still greater if major reductions in old-age mortality are achieved." The social environment in the future may thus be very different from now, with people having fewer living collateral relatives and more living ancestral relatives.

Increasing the number of immigrants might resolve short-term concerns about population growth, at least in some models, but according to Coale, the long-term impact of increased immigration on the age distribution of the population will turn out to be small if immigrants from high-fertility countries soon adopt U.S. low-fertility norms. "To avoid a large increase in proportions at older ages, a decrease in the proportions at younger ages, and the attendant increase in mean age," he notes, "high fertility would have to be imported with the immigrants."

Economic Impact

One of the most widely disputed issues involving below-replacement fertility concerns the impact that population stabilization (or even decline) will have on economic growth, innovation and technological development. Seminar participants had widely differing views on the potential economic impact of low fertility, but all agreed that if there is an effect, it will be as a result of the growing proportion of older adults. United Nations projections indicate that in 1985, a little over 15 percent of the population of West Germany was 65 years of age or over, whereas by 2025, almost 23 percent of the population will be at least 65 years of age. Similarly, France and the Netherlands can expect to see their proportions of citizens aged 65 or older rise from 12 percent of the total population in each to 19 and 22 percent, respectively.[15]

Carolyn L. Weaver, who was a research fellow at the Hoover Institution at the time of the seminar, points out that in the United States, there are now approximately 17 elderly people for every 100 people of working age; through the year 2010, this ratio is likely to stay at about the same level, but as the baby-boom cohort reaches age 65, around the year 2025, the ratio is likely to jump to about 27 per 100. In West Germany, the ratio of elderly to working-age people is likely to exceed 30 per 100 by the year 2010 and climb to 36 per 100 by 2025.[16] Weaver anticipates that social security systems will be gravely endangered by such trends. As the proportion over age 65 swells and the proportion of working-age people shrinks, such systems will be able to remain solvent only by either increasing social security taxes or decreasing benefits. When a number of Western nations (including France, the Netherlands, Sweden, Switzerland and the United Kingdom) found their social security systems to be in trouble in the recent past, they had the same choice, Weaver asserts, and almost universally elected to raise taxes rather than to eliminate or reduce benefits. Such choices could endanger the entire basis of social security systems in the future: "An intergenerational 'contract,' such as that embodied in a social security system, is seriously diluted in value if its terms are not knowable in advance and perceived to be enforceable," she warns.

However, Thomas Gale Moore, a senior fellow at the Hoover Institution, argues that the impact of increases in the size of the elderly population may not lead to a substantial increase in dependency.[17] Although there will be many more elderly people, there will be fewer children; as a result, there may be fewer children living in poverty, less crime and less money needed for public education. Ansley Coale has shown that for the most part, the proportion of the population that is of working age (between 20 and 64 years of age) will vary little, even with declining fertility rates. If the costs of raising children are fairly similar to the costs of caring for the elderly, then the cost of low fertility may be no greater than the cost of high fertility.

Economist Carmel U. Chiswick maintains that if a society has a TFR of 1.4, then 57 percent of all adult women would have either no children or only one child.[18] "People in this category are generally viewed as being in a good position to spend their money on other things, including (or perhaps especially) saving for their own retirement years. In fact, [one model] of low fertility suggests that the smaller cohort of workers in the next generation will embody more human capital than their parents, while the elderly will have greater private savings to finance their own retirement."

However, another economist, Ester Boserup, cautions that such optimistic outlooks are based on the assumption that couples having fewer children will invest more in them, and the children will be "worth more" as adult workers.[19] Boserup argues that while lower fertility may leave couples with more disposable income, there is no guarantee that they will invest this money in the education of their one child rather than in increased consumption.

Other economic effects of low fertility are even harder to predict. McNicoll suggests that the impact on labor supply, technological change and investment is likely to be slight, especially when compared with the effects on income distribution, such as the problems with social security. Some analysts have expressed concern that because an aging population would not be fueled by a steady increase in the number of young people, it might become a less-inventive one; Coale cites a comment by demographer Albert Sauvy that a stationary population is "a population of old people ruminating over old ideas in old houses." McNicoll argues that the "genius-in-numbers" argument is flawed. For one thing, he notes, the method of maintaining technological superiority preferred by many nations, including the United States, "is to tap the rest of the world for brains," which "is often a simpler matter than ensuring the best development and use of indigenous talent." Boserup observes, however, that much research is conducted by multinational companies, which, if economic conditions in low-fertility developed countries deteriorate, would not hesitate to move their operations to other areas and make use of low-wage, younger populations.

Overall, low fertility may prove to be more a challenge than a debit. As McNicoll points out, "Japan and West Germany, with TFRs of 1.7 and 1.3, are showing little evidence of technological decrepitude." The most important change in consumption would probably be in the area of health care, with both a greater direct demand and more of an indirect demand (sparked by the growing political power of the elderly). Another potentially important economic change is that there might be a slight increase in the demand for services, at the price of a decline in the demand for commodities. However, the savings rate would probably increase substantially.

McNicoll maintains that "low fertility, even somewhat below replacement level, presents no great difficulty for a modern economy. Its effects are likely [to be] small compared with business-cycle fluctuations in economic performance." He cautions, however, that "judgments on what are major and what [are] minor effects of low fertility depend on one's time horizon, on where and how far a society is thought to be able to adjust, whether through natural resiliency or by deliberate policy, and on what length of collective memory and stability of values is needed for continuity of a society's identity."

Policy Changes

Although there was little agreement over what can and should be done about low fertility, many of the seminar participants did agree that the options are limited. Restricting the availability of modern contraceptives and abortion would be a politically unattractive strategy in many developed nations, and in the few instances in which such a policy has been attempted, it has been unsuccessful. As C. Alison McIntosh of the University of Michigan observes, another method of preventing population decline—attempting to reduce death rates—would be difficult, given that death rates already are very low, and such a policy would simply leave a country with an even larger elderly community.[20] Most European nations are not only rejecting mass immigration out of hand but are further restricting immigration. Some analysts have argued that the benefits provided by the welfare state in Europe sap the willingness of citizens to have larger families, but restructuring the benefits provided to individuals would be extremely difficult politically.

Thus, there are few alternatives to the type of policy intervention that has been most often suggested in recent years: material incentives for childbearing. These incentives range from increased income-tax exemptions for children, maternity leave subsidies for working women and vastly improved day care to straightforward financial inducements, such as child allowances.

Many of the participants at the seminar raised objections to such proposals. First of all, they maintained, incentives programs would be very expensive, and many developed countries are finding it difficult to finance social programs that already exist. In addition, the small payments usually made cannot provide a realistic substitute for the wages women forfeit when they stay home to raise children rather than remain in the labor force. Nathan Keyfitz calculates that if the U.S. government decided that four million births were needed each year and that women would have to be paid $10,000 a year for five years to induce them to have those children, the cost would be $200 billion per year.

Furthermore, there is little convincing evidence that incentives work. Paul Demeny cites the case of Hungary: Although the government there introduced a costly set of pronatalist measures in 1967, the nation is now experiencing population decline. And although some have asserted that monetary payments and housing privileges helped raise birthrates somewhat in East Germany, Keyfitz observes that this seeming success was probably more closely related to the low wages and housing shortages common to East Germany.

In addition, if policy-makers eschew direct payments and focus instead on providing a broader range of social services, all designed to reduce the problems of raising children, the results may be very disappointing. Demeny observes that many policies suggested as pronatalist measures have in fact been enacted by some European nations simply because the policies were considered good in themselves. For example, no nation in the world has a package of benefits as all-encompassing as Sweden's, yet that nation's fertility rate remains below replacement level. Demeny also asserts that while the availability of day care is often described as a potentially pronatalist measure, helping women into the work force after the birth of one child might effectively *decrease* the likelihood that they will have a second child later.

What, then, are the alternatives? Rita Ricardo-Campbell, a senior fellow at the Hoover Institution, suggests that a government could award every woman who bears a child two years of earnings credit in the social security system.[21] In the United States, for example, a person must have paid Social Security taxes for 10 years before he or she can collect benefits; adding several years of credit would increase a working woman's benefits. In addition, Ricardo-Campbell contends, since part-time work is probably more compatible with raising children than is full-time employment, societies should try to make working part-time more attractive by improving part-time wages and developing a system for prorating benefits.

Annelise Anderson, another senior fellow at the Hoover Institution, advocates a series of actions that includes setting up more generous maternity leave policies; establishing a government-financed program for the education or retraining of women who have had three or more children, to help them make up for the years that they have missed in the job market; and offering today's young people the opportunity to pay lower Social Security taxes in return for lower benefits in the future, as the decreased deductions may prove to be less of a disincentive to marriage and childbearing.[22]

C. Alison McIntosh believes that governments might want to undertake more radical, less obvious reforms, such as improving the social environment by upgrading housing, providing more parks and recreational facilities, organizing better public transportation, creating traffic-free areas in residential neighborhoods and establishing the right of a parent to stay at home with a sick child without losing wages. Demeny mentions even more extreme measures: For example, to help parents reassert parental authority over their children, every couple could be given education vouchers and be allowed to decide how their child will be educated; to increase women's economic security and allow more flexibility in the choice of who will participate in the job market, a couple might be permitted to incorporate their family, thus ensuring the equal distribution of assets and responsibilities; to increase the perception that individuals' economic well-being in old age will depend in part on their number of offspring, a certain percentage of their social security contributions could be allocated directly to their parents; and, to give parents a greater political voice, they could be allowed to exercise voting rights for their children up to age 18.

Some of the seminar participants argued that it may be inappropriate for governments to involve themselves at all in reproductive decision-making. McIntosh observes that there is no strong public demand for government action in this area: "By far the greatest impediment to governmental decision-making is that ordinary people do not want a pronatalist policy. Western Europeans have developed a way of life and patterns of family formation that are incompatible with the objectives of pronatalist policy. . . . [Thus,] it is likely that governments in Western Europe will continue to tinker at the edges of family policy, working incrementally and without a clear sense of direction."

Demeny also cites the uncertain direction of future trends. "The baby boom," he comments, "came as a nearly total surprise, and the severity and duration of the subsequent downturn [in fertility] was largely unanticipated. The expectation that low fertility will endure, thus bringing long-run demographic decay, could be unwarranted." Nevertheless, with fertility rates at unprecedented lows in much of Central Europe, Demeny suggests that developed nations should try to formulate some sort of policies. "Counting on good luck alone . . . would be unwise."

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Contraceptive Use at First Intercourse Is Rising, But Majority of Women Are Still Unprotected

Fewer than half of all American women aged 15–44 used a contraceptive method at first premarital intercourse, but such use has increased significantly since the early 1960s, according to a report containing national estimates based on the 1982 National Survey of Family Growth (NSFG).[1] White women, women whose mothers had more than a high school education, those who delayed first coitus until age 19 or later and women who at the age of 14 were living with both parents were more likely to have used a method at first coitus than were other women. The most popular method at first intercourse was the condom, followed by the pill and withdrawal, but pill use has decreased and reliance on withdrawal has increased since the early 1970s.

Of the 7,969 women included in the NSFG, 2,816 were excluded from the analysis because their first intercourse occurred before 1960 or took place after marriage, or they had never had intercourse. The study sample consisted, therefore, of 5,153 women aged 15–44 who had had first premarital intercourse in 1960 or later.

Findings

In 1982, 47 percent of American women aged 15–44 who had first had premarital intercourse in 1960 or later reported using a contraceptive method at first coitus. This proportion rose from 39 percent among those who had had first coitus in 1960–1964 to 57 percent among women who had had first coitus in 1980–1982. Among all women who had used a method at first intercourse, 19 percent had chosen the condom; 11 percent, the pill; and 11 percent, withdrawal. No other method had been chosen by more than six percent of women who had used a method.

Overall, 49 percent of white women (and 74 percent of white Jewish women), 34 percent of black women and 22 percent of Hispanic women used a method at first intercourse. The data indicate that white-black differences in contraceptive use were mainly attributable to the larger proportion of white women whose partners relied on withdrawal.

The use of a contraceptive method at first premarital intercourse rose among white women throughout the 1960s and 1970s, principally because of significant increases in use of the pill and withdrawal: Forty percent of white women who had had first coitus in 1960–1964, and 51 percent of those who had had first coitus in 1975–1979, had used a contraceptive method. By comparison, use at first coitus among black women remained at around 34 percent throughout this same period. However, contraceptive use at first intercourse rose to 45 percent among black women and 60 percent among white women by 1980–1982; most of this increase was the result of a sharp rise in use of the condom.

The analysis shows age at first intercourse, living arrangement at the age of 14 and mother's education all to be significantly related to contraceptive use at first intercourse. Fifty-two percent of women who had first intercourse at age 19 or later had used a contraceptive method, compared with only 32 percent of those who had first coitus before the age of 15. Forty-nine percent of women who at age 14 were living with both parents had used a contraceptive method, compared with 39 percent of those who were living with one or neither parent. Women whose mothers had had at least 13 years of education were significantly more likely to have used a method at first coitus than were those whose mothers had received fewer than 12 years of education (54 percent vs. 38 percent, respectively).

The researchers conclude from their analysis that pregnancy prevention programs should be targeted at groups shown to have the lowest levels of contraceptive use—namely, black women, Hispanic women, those who initiate intercourse at an early age, women whose mothers did not complete high school and those who live in one-parent households. However, they point out, in order for successful interventions to be designed, further research is needed linking the psychological factors that affect contraceptive decisions to the social and demographic characteristics of individuals and of communities.

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Credits

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Research Note

Has She or Hasn't She?
U.S. Women's Experience with Contraception

By Jacqueline Darroch Forrest

In 1985, the three major U.S. television networks refused to air a public service announcement promoting contraception, sponsored by the American College of Obstetricians and Gynecologists.[1] Network representatives claimed that the topic of contraception was still too controversial to be mentioned on television, and that doing so might offend Americans opposed to the use of birth control. However, recent national polls have shown that the majority of Americans are in favor of the practice of family planning and that they would support the advertising of contraceptives on television.[2]

Special analysis of data from the 1982 National Survey of Family Growth (NSFG) suggests that such expressions of theoretical support by the public coincide with actual behavior: Well over nine out of 10 U.S. women of reproductive age who have ever had sexual intercourse have practiced some form of contraception. On average, each of those women has used almost three different methods. More than seven out of 10 have used the pill, over half have relied on the condom, some three out out of 10 have relied on spermicides, and about one out of five have used an IUD or the diaphragm. Figures such as these might lead one to conclude that contraception is no longer a controversial issue in the United States.

Findings

As Table 1 indicates, of approximately 54 million U.S. women aged 15–44, 66 percent report that they have taken the pill at some time in their lives. Forty-five percent have used the condom; 29 percent, spermicides; and about 15 percent each, the IUD or the diaphragm. Eighteen percent report that they or their partners have undergone sterilization. Ninety-seven percent of the women relying on sterilization had used a reversible contraceptive method at some time in the past.

If the analysis is limited to the approximately 46 million women aged 15–44 who have ever had sexual intercourse, the proportions who have ever used an efficient method are even higher, ranging from 17 percent who have relied on the diaphragm to 77 percent who have used the pill. Most women use more than one type of contraceptive method in the course of their childbearing years—among those who have ever practiced contraception, the average number of methods is 2.8.

In addition, as Table 1 also shows, among women who have ever had sexual intercourse, 30 percent report having practiced withdrawal or douching; and 18 percent say they have relied on periodic abstinence (or rhythm). Almost all of the women who have ever relied on withdrawal, douching or periodic abstinence say they have also used a contraceptive method that involves drugs, devices or surgery. Only two percent of women who have had sexual intercourse say that they have never used any method of contraception except those involving rhythm, withdrawal or douching.

Overall, 95 percent of U.S. women of reproductive age who have had intercourse have employed some method of birth control; 92 percent have used a method involving a drug, device or surgery.

Who are the U.S. women aged 15–44 who have never had intercourse, and who are those who have had coitus but have never used a contraceptive method? NSFG tabulations indicate that the former group represent 14 percent of all women aged 15–44 (or about 7.6 million women). Eighty-nine percent of the women who have never had sexual intercourse are under the age of 25, and 90 percent say that they want to have a child someday, which suggests that they will become sexually active in the future. There is no reason to assume that these women will be any less likely than those who have already engaged in intercourse to use contraceptives if and when they become sexually active.

Table 1. Among all U.S. women aged 15–44, and among those aged 15–44 who have ever had sexual intercourse, percentage who have ever used various contraceptive methods, 1982 National Survey of Family Growth

Method	All women (N=54,099)	Sexually active women (N=46,419)
Any method	**81.2**	**94.6**
Pill	65.9	76.8
Condom	44.7	52.1
Spermicides	28.8	33.5
Other*	25.6	29.9
Sterilization	17.8	20.8
IUD	15.9	18.5
Periodic abstinence	15.8	18.4
Diaphragm	14.8	17.2

*Withdrawal, douche or other. Note: Ns in 000s.

Sexually active women who have not used a contraceptive method (approximately 2.5 million women) constitute only five percent of all women aged 15–44 who have ever had sexual intercourse, and fewer than three percent of those in their prime childbearing years (25–34 years). The proportions of never-users are somewhat higher among women who have never married, Catholic women, Hispanics and blacks. In addition, 27 percent of sexually active women who have never used a contraceptive method cannot have children because they or their partners have some physical impairment.

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Documents

Adolescent Family Life Act of 1981 Found Unconstitutional

U.S. District Court Judge Charles R. Richey ruled on April 15, 1987, that sections of the Adolescent Family Life Act, enacted in 1981, violated the Establishment Clause of the First Amendment of the U.S. Constitution, which requires the separation of church and state. The law had obliged applicants for funding to involve religious organizations in their activities and had encouraged religious organizations to become grantees. It had also permitted funding only to organizations that neither provided abortions nor referred clients to abortion facilities. In carrying out the law, the Department of Health and Human Services (DHHS) had either directly or indirectly funded at least 10 religious organizations. Judge Richey held the law invalid for religious organizations on the grounds that it had the effect of advancing religion and resulted in excessive entanglement between church and state. After hearing further arguments on whether the language concerning religious organizations can be severed from the rest of the law, the judge will decide whether the entire law should be declared invalid.

The following excerpts are taken from Judge Richey's opinion. (In all cases, the emphases in these extracts are those of Judge Richey.)

Introduction

. . . [The Adolescent Family Life Act (AFLA)] is a congressional response to the severe and manifold problems resulting from teenage pregnancy. . . . The act was designed to prevent adolescent pregnancy by promoting self-discipline, and to mitigate . . . the severe economic, social and health problems that often result from premarital sexual relations and teenage pregnancy. . . .

Although the court must consider the AFLA as a whole, two sections are particularly relevant to the court's decision. First, the AFLA requires applicants to describe how they "will, as appropriate in the provision of services, . . . *involve* . . . *religious* and charitable *organizations*, voluntary associations, and other groups in the private sector as well as services provided by publicly sponsored initiatives."[1] . . .

Secondly, the AFLA limits funding "to programs or projects which do not provide abortions or abortion counseling or referral, or which do not subcontract with or make any payment to any person who provides abortions or abortion counseling or referral, except that any such program or project may provide referral for abortion counseling to a pregnant adolescent if such adolescent and the parents or guardians of such adolescent request such referral; and grants can be made only to projects or programs which do not advocate, promote, or encourage abortion."[2] . . .

The appropriate test for determining whether the AFLA violates the Establishment Clause is set forth in *Lemon* v. *Kurtzman*.[3] To withstand scrutiny under [this] test, the AFLA (1) must have a valid secular purpose, (2) must not have the primary effect of advancing or inhibiting religion, and (3) must not foster excessive entanglement between government and religion. If the AFLA fails *any one* of these three parts of the . . . test, then the court must declare the statute unconstitutional. . . .

In addition, political divisiveness, while never the only ground for holding a statute unconstitutional, is a fourth factor often considered by the courts. A statute that causes political division along religious lines is more likely to offend the Establishment Clause than [is] one that does not.[4] . . .

[Valid Secular Purpose]

. . . The court can only conclude from the indisputable language of the AFLA that the statute's purpose was to solve the problems caused by teenage pregnancy and premarital sexual relations. This is a valid secular purpose. . . . This conclusion is buttressed by the uncontroverted fact that a significant amount of AFLA grants have been awarded to nonsectarian grantees to provide care and counseling services to adolescents. That these secular purposes coincide or conflict with religious tenets does not transform them into sectarian purposes motivated *wholly* by religious considerations.[5] The court must therefore find that the AFLA, both on its face and as applied, was not motivated *wholly* by religious considerations but has a valid secular purpose. . . .

[Advancing Religion]

. . . The second prong of the . . . test requires this court to determine whether the AFLA's "primary effect [is] one that neither advances nor inhibits religion."[6] The court finds that the AFLA, both on its face and as applied, has the primary effect of advancing religion and, therefore, violates the Establishment Clause. . . .

The legislative history of [the AFLA] shows without doubt that Congress intended religious organizations to participate in these programs as grantees and as paid or unpaid participants in grants awarded to other organizations.[7] Even more important, the statute, taken as a whole, explicitly permits religious organizations to be grantees and envisions a direct role for those organizations in the education and counseling components of AFLA grants. . . .

. . . The statute's "direct and immediate" effect of advancing religion is easy to see from [its] emphasis on "education" and "counseling." Put plain, these functions amount to *teaching* by grant recipients and subcontractors, including religious organizations about the harm of premarital sexual relations and the factors supporting a choice of adoption rather than abortion, and these matters are fundamental elements of religious doctrine. Moreover, the AFLA contains no restriction whatsoever against the teaching of religion *qua* religion or any attempt to use the education and counseling process to "intentionally or inadvertently" inculcate religious belief.[*] . . .

It is a fundamental tenet of many religions that premarital sex and abortion are wrong, even sinful.[8] The AFLA does not prohibit these religions from receiving AFLA grants. Thus, by contemplating the provision of aid to organizations affiliated with these religions—aid for the purpose of encouraging abstinence and adoption—the AFLA contemplates subsidizing a fundamental religious mission of those organizations.

To presume that AFLA counselors from religious organizations can put their beliefs aside when counseling an adolescent on matters that are part of religious doctrine is simply unrealistic.[9] Even if it were possible, government would tread impermissibly on religious liberty merely by suggesting that religious organizations instruct *on doctrinal matters* without any conscious or unconscious reference to that doctrine. Moreover, the statutory scheme is fraught with the possibility that religious beliefs might infuse instruction and never be detected by the impressionable and unlearned adolescent to whom the instruction is directed. *This possibility alone amounts to an impermissible advancement of religion.*[10] . . . [Moreover,] the AFLA contemplates one-on-one counseling, a situation in which there are few discernible constraints. The possibility that religious organizations will exert pressure on "matters sacred to conscience" is inherent in this counseling, and it renders the program invalid.[11]

Similarly, the involvement of religious organizations in counseling and education on premarital sex, abstinence, and the preferability of adoption to abortion creates a "crucial symbolic link" between government and religion when the counseling is funded by the public fisc. This symbolic link is quite strong where the education is directed at adolescents, especially pregnant adolescents who may be in a delicate and more than ordinarily receptive state of mind. And it is particularly strong where, as here, the subjects taught are, in the hands of a "religious organization," inescapably infused with religious beliefs.[12]

In short, the AFLA on its face has the primary effect of advancing religion. This alone would force the court to declare the law constitutionally infirm. . . .

[Further,] the undisputed record before the court transforms the inherent conflicts between the AFLA and the Constitution into reality. . . . These facts reveal that AFLA grantees and subgrantees have included several organizations with institutional ties to religious denominations and corporate requirements that the organizations abide by and not contradict religious doctrines. In addition, other recipients of AFLA funds, while not explicitly affiliated with a religious denomination, are religiously inspired and dedicated to teaching the dogma that inspired them. While the court will not engage in an exhaustive recitation of the record, references to representative portions of the record reveal the extent to which the AFLA has in fact "directly and immediately" advanced religion, funded "pervasively sectarian" institutions, or permitted the use of federal tax dollars for education and counseling that amounts to the teaching of religion.

Consider first St. Margaret's Hospital, a self-described "Christian institution" committed to acting "in harmony with the teaching of the Catholic Church."[13] At least one AFLA-funded employee of St. Margaret's was told that she must follow the directives set forth in "Ethical and Religious Directives of Catholic Facilities."[14] Similarly, subgrantees of St. Ann's Infant and Maternity Home, which are affiliated with the Catholic Archdiocese of Washington, may not counsel or refer patients for abortions; nor do they encourage any method of birth control not permitted by Catholic doctrine.[15] Significantly, these subgrantees are solely responsible for the family planning component of St. Ann's AFLA program, so the church-directed restrictions on counseling are highly pertinent.[16] Moreover, the projects are directed by members of religious orders, which base their curriculum on materials with explicitly religious content.[17] . . .

Similarly, among the "purposes" listed in the Articles of Incorporation of Lutheran Family Services [are]: "To promote the extension of the kingdom of God through compassionate Christian love and to aid the Lutheran Churches in Iowa to fulfill their responsibilities of compassion and love . . . [and] to promote the general welfare of children, families and individuals within the realistic resources of the corporation, . . . and *the teachings of the Lutheran Church.*"[18]

All told, the record reveals that at least 10 AFLA grantees or subgrantees were themselves "religious organizations" in the sense that they have explicit corporate ties to a particular religious faith and bylaws or policies that prohibit any deviation from religious doctrine. . . . The religious character of other AFLA grantees or subgrantees is not as explicit but is nonetheless indisputable.

Family of the Americas Foundation (FAF), for instance, is an affiliate of "WOOMB–International," an organization without discernible religious ties. But WOOMB's "Aims and Objectives" state that the organization was "inspired by the encyclical *Humanae Vitae*,"[19] the papal encyclical setting forth Catholic dogma on birth control and abortion. Publications used by, published by, and conferences sponsored by FAF have largely been devoted to explicating the doctrine set forth by the *Humanae Vitae* as well as other religious precepts.[20] Indeed, FAF's executive director has stated that she "reports" to the pope on behalf of the organization.[21] Other documents buttress this connection between FAF and the Catholic Church.[22]

These explicit or implicit corporate policies might give less pause with respect to a federal program that did not implicate religious tenets. But the situation here is quite different. Because these religious organizations use federal funds to educate or counsel on matters inseparable from religious dogma, the constitutional implications of the grants are clear and troubling: The inescapable conclusion is that federal funds have been used by pervasively sectarian institutions to teach matters inherently tied to religion.

The record demonstrates that some grantees have included explicitly religious materials, or a curriculum that indicates an intent to teach theological and secular views on sexual conduct, in their [D]HHS-approved grant proposals.[23] . . .

Nor do the facts suggest that the programs in operation cured the First Amendment problems evident from these approved grant applications. At least one grantee included "spiritual counseling" in its AFLA program.[24] Other AFLA programs used curricula with explicitly religious materials.[25] In addition, a very large number of AFLA programs took place on sites adorned with religious symbols—*precisely* the "crucial symbolic link" between religion and government that Establishment Clause jurisprudence has cautioned against, particularly where youngsters are involved.[26] . . .

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[*] This absence of any statutory prohibition on inculcation of religious belief puts the AFLA in a class by itself. The court knows of no other statutory scheme that expressly contemplates religious involvement in a government-funded program and does not attempt to segregate inculcation of religious belief from public financial support. . . . While the court is aware that [D]HHS's "Notice of Grant Award" specifies that grants may not be used to "teach or promote religion," this is neither a statutory prohibition nor an official administrative regulation. It is merely an unpublished administrative warning that was written at agency discretion and can be revoked by agency fiat. No case permits a court to find that such a discretionary statement adequately protects against sectarian use of public funds. The court is also aware that [the] defendant claims that [D]HHS officials verbally advised grantees that they may not use AFLA funds to teach religion. Even if true, the fact that [D]HHS warnings may undo some of the statute's damage does not solve the problem with the statute itself. . . .

Similarly, the record reveals that some grantees attempted to evade restrictions they perceived on AFLA-funded religious teaching by establishing programs in which an AFLA-funded staffer's presentations would be immediately followed, in the same room and in the staffer's presence, by a program presented by a member of a religious order and dedicated to the presentation of religious views on the subject covered by the AFLA staffer.[27] This transparent attempt to isolate the sectarian from the secular is unconvincing; indeed, the joint presence of denominational personnel and federally funded employees reinforces the impermissible symbolic tie, if not an actual tie, between government and religion.[28]

Equally disturbing, the overwhelming number of comments shows that program participants believed that these federally funded programs were also sponsored by the religious denomination.[29] This appearance of joint action provides a significant symbolic benefit to religion altogether at odds with the First Amendment's demand of scrupulous neutrality between religion and nonreligion.[30]

In sum, the facts demonstrate beyond peradventure the effect of the AFLA programs. The act creates an explicit connection between a state-sponsored program, a religiously identified organization, and either a [religiously] inspired curriculum or a classroom replete with religious symbols. . . . Moreover, to the extent that AFLA grantees were religious organizations that used AFLA grants to "educate" or "counsel" on the basis of a religious or religiously inspired curriculum, . . . the funds went to sectarian institutions for purposes indistinguishable from their religious aims.

. . . Accordingly, the court has no choice but to find that the AFLA, on its face and as applied, has the effect of impermissibly advancing religion and thereby violates the First Amendment of the Constitution. . . .

Conclusion

This court is certain that the Adolescent Family Life Act emanates from well-founded and benign intentions. It is equally convinced that much of the AFLA has a laudable purpose. But the purposes of the statute are not the only issue before the court. The critical issue is whether the AFLA, and the manner in which it is implemented by [D]HHS, violates the Establishment Clause of the First Amendment.

The Establishment Clause, in the words of Thomas Jefferson, erects a "wall of separation" between church and state.[31] This wall exists not specifically to bar programs such as the AFLA but for a larger purpose: To protect the sanctity and freedom of all religions, regardless of their beliefs and practices. Although cooperation between government and religion to further mutually agreeable objectives may seem harmless, such cooperation may take on an intrusive and unwelcome color when conflicts arise between government directives and religious beliefs. History shows the necessity of protecting religion from government.

There will always be some who see no harm in utilizing the executive branch to monitor religious organizations and some whose own religious beliefs are more likely than not to coincide with the beliefs given a government imprimatur. But there will always be others in our pluralistic society whose religious beliefs are out of harmony with the government-approved view and who may not be able to hold fast to their beliefs in the face of government involvement. . . .

. . . [A] society is only truly free when individuals are left free from direct or indirect pressure to abandon their own cherished religious beliefs for whatever set of beliefs currently holds government favor. As a result, it is essential that we scrupulously adhere to Jefferson's vision and protect religion from government intrusion, whether the intrusion is obviously malignant or seemingly benign. . . .

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Books in Review

Can Feminist Law Reform Be Salvaged?

Women in Law: Explorations in Law, Family and Sexuality
ed. by Julia Brophy and Carol Smart, Routledge & Kegan Paul, London, 1985, $26.95 (cloth), $12.95 (paper), 219 pp.

Reviewed by Rachael N. Pine

Though encumbered by rhetoric and a defensive tone, *Women in Law* persuasively illustrates how traditional notions of the family continue to have legal ramifications that undermine feminist-inspired law reform in Britain. The editors note that although British law has been dramatically altered by the feminist movement since the nineteenth century, the application and effects of the law remain pervaded by sexist bias. Julia Brophy, a research and campaigning officer with the Rights of Women Collective in London, and Carol Smart, director of the National Council for One Parent Families in London, illustrate through their collection of essays the dilemma that faces feminists in England and elsewhere: The pursuit of social reform through the law uses the legal system that is itself a part of society's prevailing ideology; yet rejection of legal reform and of the legal system to resolve disputes leaves women entirely unprotected from the power imbalances that exist in society and oppressed by the law they have chosen not to reform.

Part I of *Women in Law* provides a varied overview of the ways in which traditional concepts of family and female sexuality creep into the administration of even the most enlightened legal system. It thereby leaves the impression that only pervasive attitudinal changes throughout society will permit reform that brings about material change for women.

Lucy Bland discusses a historical example of a purportedly beneficial reform that, in actuality, permitted the perpetuation of the traditional restriction of women and their sexuality—the "policing of women" by female police officers during World War I. She adeptly narrates what she calls the "slippage" from the original goal of women protecting women into policing activity more akin to surveillance. So drastic was this transformation that female police officers ultimately were used to protect men from prostitutes, who were seen as representative of feminine vice, promiscuity and disease. Female police officers became the moral watchdogs of their sisters. Bland points out that feminists were of two minds about whether the gains of women's recruitment into the police force outweighed the use of these women to control and oppress other women.

In a chapter called "Legal Subjects and Sexual Objects," Carol Smart discusses how the law embodies traditional notions of female sexuality by subjecting women who are overtly and aggressively sexual to criminal liability as prostitutes. Smart poses the following problem for feminists: How can we support prostitutes without supporting prostitution? Suggesting that the line between prostitutes and other women is subjective, Smart contests the law's classification of prostitutes as a special group, and she argues that feminists should view the treatment of prostitutes as a feminist issue. Smart also identifies ideological trends apparent in the opinions of the magistrates who apply the law, demonstrating that they condemn as abnormal, subhuman or not respectable the public visibility of female sexuality through prostitution.

Katherine McAnn describes how judicial interpretation and police practices have undermined legislation designed to help battered women. She points to the fact that, except in emergency circumstances, judges have required that the husband/batterer be given advance notice and an opportunity to be heard before he can be barred from his residence. McAnn also describes police attitudes that regard violence or abuse within the home as private matters outside the realm of public control except in the most egregious of circumstances. Such a hands-off philosophy of law enforcement protects the already powerful, in this case, the batterer. Of course, neither the right to privacy within the family nor the right to due process should be lightly dismissed, and McAnn's chapter loses some of its force by failing to address these points.

In her chapter on the status of mothers involved in child custody disputes, Julia Brophy argues that law reform has facilitated a backlash against women. Although the transition from presumptive male ownership of children to the welfare principle (known as the "best interests of the child" standard in the United States) appeared to mark a victory for women in their capacity as mothers, Brophy argues that this change in the law has actually allowed men to increase their bargaining power in custody disputes by calling into question the sexual behavior of the mother. Women who transgress social and sexual norms are threatened with loss of custody, and lesbian mothers and women accused of adultery are frequently unable to obtain custody of their children. Brophy also believes that the recent preference for joint custody perpetuates preexisting marital power relationships, fails to account for the economic and social realities of child-care responsibilities and facilitates intervention by the father in the mother's new life.

Mary Eaton describes how traditional family and gender roles are reflected in "social inquiry reports" (called presentence reports in the United States), prepared by probation officers to help the courts determine an appropriate course of action for a criminal defendant. She analyzes a sample of such reports and finds that, in general, unorthodox domestic situations are seen as

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a cause of crime: Reports evaluating defendants who are single parents emphasize the emotional stress of single parenthood for males and the economic stress of parenting alone for females. While male and female defendants receive home visits from social workers in equal proportions, social inquiry reports reflect the view that women are primary in the domestic sphere. Thus, home visits to women result in a description of the condition of the house, and home visits to men result in a description of the woman involved with that man.

Although the theme that unifies Part II of *Women in Law* is somewhat obscure, this section attempts to revive the value of a legal agenda for feminists. Elizabeth Kingdom summarizes the Marxist feminist critique of the abortion rights movement. That view sees the movement as bourgeois, based on class-oriented concepts of privacy and individualism and seeking only change that is acceptable within the law and, thus, within the "patriarchy." Unfortunately, when Kingdom attempts to defend reform in abortion law, she slips into a discussion of the "right to choose" slogan. Although she notes in passing the dependence of all feminist objectives on full reproductive autonomy, her argument is sidetracked by the question of whether the slogan implies a demand for an absolute that is unattainable in practice. In keeping with the theme of *Women in Law*, she could simply have posed and answered the following question: Has reform of abortion laws resulted in the oppression of women in their daily lives simply because the law has refused to embrace the absolute right of a woman to choose? Kingdom trivializes and shortchanges the debate by failing to point out the very real and beneficial effects on the lives of women of even a qualified right to an abortion.

Finally, in her critique of "conciliation," Anne Bottomley illustrates the complexities of the feminist law reform dilemma. Conciliation—known as mediation in the United States—is an alternate system of resolving disputes between marital partners seeking separation or divorce. It presumes to result in a nonadversarial, negotiated marital dissolution. Bottomley traces the modern trend toward informal, out-of-court conciliation, characterizing it as a rejection of reform because it involves the development of an alternative system rather than efforts to change the law. She cautions that in the present social structure, such an alternative system may be more detrimental to women than is the inadequate, flawed and oppressive legal system because the economic, psychological and social vulnerability of women robs them of equal bargaining power with men. Without objective guidelines, Bottomley contends, the nonjudicial conciliators are left free to exacerbate the inequality between partners through imposition of their own traditional ideas about support, custody, child care and other postdivorce matters. The old, albeit flawed, system of formal justice offers substantive rights, procedural safeguards and the support of lawyers, who can presumably help to mitigate the influence of any power imbalances that exist between the sexes. Bottomley argues that such a system is more advantageous for those who are vulnerable, weak, poor or simply nonconforming.

The editors of *Women in Law* conclude that although law reform may at times victimize women, it is a necessary part of an overall feminist agenda. The book teaches, however, that reformers should be mindful of legal practice and the experience of past reforms in formulating their demands and that feminists should resist the temptation to cast strategic dilemmas as either-or choices between extremes.

(Continued from page 114)

in Arlington in June, Bowen warned representatives "not to be complacent about the overall low level of infection in the general population," but to learn how to exploit the opportunity that clinics have to slow the spread of infection among heterosexuals before it explodes, particularly among the drug-using population.[32]

Moran, issuing an even more strongly worded challenge to the field, says "family planning clinics, along with abortion, STD and maternal and child health clinics, . . . are the first line of defense in terms of education about and diagnosis of HIV and control of AIDS in the heterosexual population."[33] And Dwyer concludes that the threat of AIDS challenges family planning providers to expand their role "beyond birth control to disease control." Providers, she claims, have an "ethical, moral and legal responsibility not just to their patients but to their patients' contacts and kids."[34]

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> The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective, case-control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS. Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI). Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S. so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE. Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK. Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES. A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34 – 5/100,000; ages 35-44 – 33/100,000; ages 45-49 – 140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34 – 1/6700 for nonsmokers and 1/2000 for smokers; ages 45 and over – 1/2500 for nonsmokers and 1/500 for smokers. Risk appeared to increase with parity, but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth, except for OCs in women over 40 who smoke. (Rates given for pill only/smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS – RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40 +
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C,D	C
Nonsmokers (other predisposing conditions)	C	C,B	B,A

A – Use associated with very high risk
B – Use associated with high risk
C – Use associated with moderate risk
D – Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions.* Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden, or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma.* Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case-control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors.* Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen." The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* Use of female sex hormones – estrogenic and progestational agents – during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1/1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case-control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1/1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective, and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease.* Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects.* Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure.* An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences," or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache.* Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities.* Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility.* There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding.* OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast-fed child have not been determined. If feasible, defer OC use until the infant has been weaned.

Precautions *GENERAL.* 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. DRUG INTERACTIONS. OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS.* See Warnings. *PREGNANCY.* Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS.* See Warnings.

Adverse Reactions An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hemorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package Insert)

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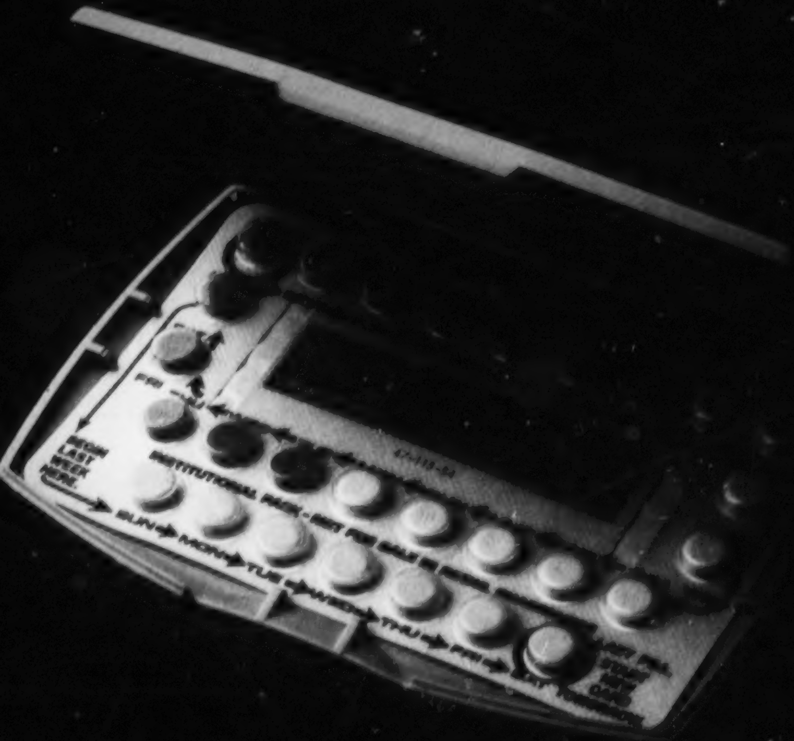

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Please see brief summary of full prescribing information on next page

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Family Planning

Perspectives

Volume 19, Number 4, July/August 1987

Abortion Training in the United States
Impact of Family Planning Programs

Adolescent Mothers in Later Life

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PARKE-DAVIS

Please see next page for brief summary of prescribing information.

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LOESTRIN® Fe

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IRON BUILDS COMPLIANCE

Before prescribing, please see full prescribing information. A Brief Summary follows:
INDICATIONS AND USAGE: Loestrin is indicated for the prevention of pregnancy in women who elect to use OCs as a method of contraception. **Dose-Related Risk of Thromboembolism from Oral Contraceptives:** Two studies have shown a positive association between the dose of estrogens in OCs and the risk of thromboembolism. For this reason, it is prudent and in keeping with good principles of therapeutics to minimize exposure to estrogen. The OC product prescribed for any given patient should be that product containing the least amount of estrogen that is compatible with an acceptable pregnancy rate and patient acceptance. It is recommended that new acceptors of OCs be started on preparations containing 0.05 mg or less of estrogen. **CONTRAINDICATIONS:** OCs should not be used in women with any of the following conditions: 1. Thrombophlebitis or thromboembolic disorders; 2. A past history of deep vein thrombophlebitis or thromboembolic disorders; 3. Cerebral vascular or coronary artery disease; 4. Known or suspected carcinoma of the breast; 5. Known or suspected estrogen-dependent neoplasia; 6. Undiagnosed abnormal genital bleeding; 7. Known or suspected pregnancy (see Warning No. 5); 8. Benign or malignant liver tumor that developed during the use of OCs or other estrogen-containing products.

WARNINGS

> **Cigarette smoking increases the risk of serious cardiovascular side effects from oral contraceptive use. This risk increases with age and with heavy smoking (15 or more cigarettes per day) and is quite marked in women over 35 years of age. Women who use oral contraceptives should be strongly advised not to smoke.**
>
> The use of oral contraceptives is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, hepatic adenoma, gallbladder disease, and hypertension. Practitioners prescribing oral contraceptives should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems.* An increased risk of thromboembolic and thrombotic disease associated with the use of OCs is well established. Three principal studies in Great Britain and three in the US have demonstrated an increased risk of fatal and nonfatal venous thromboembolism and stroke, both hemorrhagic and thrombotic. These studies estimate that users of OCs are 4 to 11 times more likely than nonusers to develop these diseases without evident cause. **Cerebrovascular Disorders:** In a collaborative American study of cerebrovascular disorders in women with and without predisposing causes, it was estimated that the risk of hemorrhagic stroke was 2.0 times greater in users than in nonusers and the risk of thrombotic stroke was 4 to 9.5 times greater in users than in nonusers. **Myocardial Infarction:** An increased risk of MI associated with the use of OCs has been reported, confirming a previously suspected association. These studies, conducted in the UK, found, as expected, that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia), the higher the risk of developing MI, regardless of whether the patient was an OC user or not. OCs, however, were found to be a clear additional risk factor. In terms of relative risk, it is estimated that OC users who do not smoke (smoking is considered a major predisposing condition to MI) are about twice as likely to have a fatal MI as nonusers who do not smoke. OC users who are also smokers have about a 5-fold increased risk of fatal infarction compared with users who do not smoke, but about a 10- to 12-fold increased risk compared with nonusers who do not smoke. Furthermore, the amount of smoking is an important factor. In determining the importance of these relative risks, however, the baseline rates for various age groups must be given serious consideration. The importance of other predisposing conditions mentioned above in determining relative and absolute risks has not yet been quantified; it is quite likely that the same synergistic action exists, perhaps to a lesser extent. **Risk of Dose:** In an analysis of data derived from several national adverse reaction reporting systems, British investigators concluded that the risk of thromboembolism, including coronary thrombosis, is directly related to the dose of estrogen used in OCs. Preparations containing 100 mcg or more of estrogen were associated with a higher risk of thromboembolism than those containing 50 to 80 mcg of estrogen. Their analysis did suggest, however, that the quantity of estrogen may not be the sole factor involved. This finding has been confirmed in the US. **Persistence of Risk:** In confirmation of earlier reports, two studies have suggested that an increased risk may persist for as long as 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI. In addition, one prospective study suggested the persistence of risk for subarachnoid hemorrhage. **Estimate of Excess Mortality from Circulatory Diseases:** A large prospective study carried out in the UK estimated the mortality rate per 100,000 women per year from diseases of the circulatory system for users and nonusers of OCs according to age, smoking habits, and duration of use. The overall excess death rate annually from circulatory diseases for OC users was estimated to be 20 per 100,000 (ages 15 to 34 – 5/100,000; ages 35 to 44 – 33/100,000; ages 45 to 49 – 140/100,000), the risk being concentrated in older women, in those with a long duration of use, and in cigarette smokers. It was not possible, however, to examine the interrelationships of age, smoking, and duration of use, nor to compare the effects of continuous versus intermittent use. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all of these deaths occurred in women 35 or older. Until larger numbers of women under 35 with continuous use for 5 or more years are available, it is not possible to assess the magnitude of the relative risk for this younger age group. The available data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. The estimates of risk of death for each method include the combined risk of the contraceptive method (eg, thromboembolic and thrombotic disease in the case of OCs) plus the risk attributable to pregnancy or abortion in the event of method failure. This latter risk varies with the effectiveness of the contraceptive method. The study concluded that the mortality associated with all methods of birth control is low and below that associated with childbirth, with the exception of OCs in women over 40 who smoke. The lowest mortality is associated with the condom or diaphragm backed up by early abortion. The risk of thromboembolic and thrombotic disease associated with OCs increases with age after approximately age 30 and, for MI, is further increased by hypertension, hypercholesterolemia, obesity, diabetes, or history of preeclamptic toxemia and especially by cigarette smoking. The physician and the patient should be alert to the earliest manifestations of thromboembolic and thrombotic disorders (eg, thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). If any of these occurs or is suspected, the drug should be discontinued immediately. A 4- to 6-fold increased risk of postsurgical thromboembolic complications has been reported in OC users. If feasible, OCs should be discontinued at least 4 weeks before surgery of a type associated with an increased risk of thromboembolism or prolonged immobilization. 2. *Ocular Lesions.* There have been reports of neuro-ocular lesions, such as optic neuritis or retinal thrombosis, associated with the use of OCs. Discontinue OC medication if there is unexplained, sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma.* Long-term continuous administration of either natural or synthetic estrogen in certain animal species increases the frequency of carcinoma of the breast, cervix, vagina, and liver. Certain synthetic progestogens, none currently contained in OCs, have been noted to increase the incidence of mammary nodules, benign and malignant, in dogs. In humans, three case control studies have reported an increased risk of endometrial carcinoma associated with the prolonged use of exogenous estrogen in postmenopausal women. One publication reported on the first 21 cases submitted by physicians to a registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the cases found in women without predisposing risk factors for adenocarcinoma of the endometrium (eg, irregular bleeding at the time OCs were first given, polycystic ovaries), nearly all occurred in women who had used a sequential OC. These products are no longer marketed. No evidence has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs. Several studies have found no increase in breast cancer in women taking OCs or estrogens. One study, however, while also noting no overall increased risk of breast cancer in women treated with OCs, found an excess risk in the subgroups of OC users with documented benign breast disease. A reduced occurrence of benign breast tumors in users of OCs has been well documented. In summary, there is at present no confirmed evidence from human studies of an increased risk of cancer associated with OCs. Close clinical surveillance of all women taking OCs is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, appropriate diagnostic measures should be taken to rule out malignancy. Women with a strong family history of breast cancer or who have breast nodules, fibrocystic disease, or abnormal mammograms should be monitored with particular care if they elect to use OCs. 4. *Hepatic Tumors.* Benign hepatic adenomas have been found to be associated with the use of OCs. One study showed that OC formulations with high hormonal potency were associated with a higher risk than lower potency formulations. Although benign, hepatic adenomas may rupture and may cause death through intra-abdominal hemorrhage. This has been reported in short-term as well as long-term users of OCs. Two studies relate risk with duration of use of the contraceptive, the risk being much greater after 4 or more years of OC use. While hepatic adenoma is a rare lesion, it should be considered in women presenting with abdominal pain and tenderness, abdominal mass or shock. A few cases of hepatocellular carcinoma have been reported in women taking OCs. The relationship of these drugs to this type of malignancy is not known at this time. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring.* The use of female sex hormones – both estrogenic and progestational agents – during early pregnancy may seriously damage the offspring. It has been shown that females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been demonstrated to be of the order of 1 in 1,000 exposures or less. Although there is no evidence at the present time that OCs further enhance the risk of developing this type of malignancy, such patients should be monitored with particular care if they elect to use OCs. Furthermore, a high percentage of such exposed women (from 30% to 90%) have been found to have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether this condition is a precursor of vaginal malignancy. Male children so exposed may develop abnormalities of the urogenital tract. Although similar data are not available with the use of other estrogens, it cannot be presumed that they would not induce similar changes. An increased risk of congenital anomalies, including heart defects and limb defects, has been reported with the use of sex hormones, including OCs, in pregnancy. One case control study has estimated a 4.7-fold increase in risk of limb reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some of these exposures were very short and involved only a few days of treatment. The data suggest that the risk of limb reduction defects in exposed fetuses is somewhat less than 1 in 1,000 live births. In the past, female sex hormones have been used during pregnancy in an attempt to treat threatened or habitual abortion. There is considerable evidence that estrogens are ineffective for these indications, and there is no evidence from well-controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. It is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period, and further use of OCs should be withheld until pregnancy has been ruled out. If pregnancy is confirmed, the patient should be apprised of the potential risks to the fetus and the advisability of continuation of the pregnancy should be discussed in the light of these risks. It is also recommended that women who discontinue OCs with the intent of becoming pregnant use an alternate form of contraception for a period of time before attempting to conceive. Many clinicians recommend 3 months although no precise information is available on which to base this recommendation. The administration of progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding should not be used as a test of pregnancy. 6. *Gallbladder Disease.* Studies report an increased risk of surgically confirmed gallbladder disease in users of OCs and estrogens. In one study, an increased risk appeared after 2 years of use and doubled after 4 or 5 years of use. In one of the other studies, an increased risk was apparent between 6 and 12 months of use. 7. *Carbohydrate and Lipid Metabolic Effects.* A decrease in glucose tolerance has been observed in a significant percentage of patients on OCs. For this reason, prediabetic and diabetic patients should be carefully observed while receiving OCs. An increase in triglycerides and total phospholipids has been observed in patients receiving OCs. The clinical significance of this finding remains to be defined. 8. *Elevated Blood Pressure.* An increase in blood pressure has been reported in patients receiving OCs. In some women, hypertension may occur within a few months of beginning OC use. In the first year of use, the prevalence of women with hypertension is low in users and may be no higher than that of a comparable group of nonusers. The prevalence in users increases, however, with longer exposure, and in the fifth year of use is two and a half to three times the reported prevalence in the first year. Age is also strongly correlated with the development of hypertension in OC users. Women who previously have had hypertension during pregnancy may be more likely to develop elevation of blood pressure when given OCs. Hypertension that develops as a result of taking OCs usually returns to normal after discontinuing the drug. 9. *Headache.* The onset or exacerbation of migraine or development of headache of a new pattern which is recurrent, persistent, or severe, requires discontinuation of OCs and evaluation of the cause. 10. *Bleeding Irregularities.* Breakthrough bleeding, spotting and amenorrhea are frequent reasons for patients discontinuing OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, nonfunctional causes should be borne in mind. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, adequate diagnostic measures are indicated to rule out pregnancy or malignancy. If pathology has been excluded, time or a change to another formulation may solve the problem. Changing to an OC with a higher estrogen content, while potentially useful in minimizing menstrual irregularity, should be done only if necessary since this may increase the risk of thromboembolic disease. Women with a past history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may have a tendency to remain anovulatory or to become amenorrheic after discontinuation of OCs. Women with these preexisting problems should be advised of this possibility and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may also occur in women without previous irregularities. 11. *Ectopic Pregnancy.* Ectopic as well as intrauterine pregnancy may occur in contraceptive failures. 12. *Breast Feeding.* OCs given in the postpartum period may interfere with lactation. There may be a decrease in the quantity and quality of the breast milk. Furthermore, a small fraction of the hormonal agents in OCs has been identified in the milk of mothers receiving these drugs. The effects, if any, on the breast-fed child have not been determined. If feasible, the use of OCs should be deferred until the infant has been weaned. **PRECAUTIONS: General:** 1. A complete medical and family history should be taken prior to the initiation of OCs. The pretreatment and periodic physical examinations should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant laboratory tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical examination. 2. Under the influence of estrogen-progestogen preparations preexisting uterine leiomyomata may increase in size. 3. Patients with a history of psychic depression should be carefully observed and the drug discontinued if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the medication and use an alternative method of contraception in an attempt to determine whether the symptom is drug related. 4. OCs may cause some degree of fluid retention. They should be prescribed with caution, and only with careful monitoring, in patients with conditions which might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma, or cardiac or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence of jaundice while receiving OC therapy. If jaundice develops in any patient receiving such drugs, the medication should be discontinued. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution. 7. OC users may have disturbances in normal tryptophan metabolism which may result in a relative pyridoxine deficiency. The clinical significance of this is undetermined. 8. Serum folate levels may be depressed by OC therapy. Since the pregnant woman is predisposed to the development of folate deficiency and the incidence of folate deficiency increases with increasing gestation, it is possible that if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and complications attributed to this deficiency. 9. The pathologist should be advised of OC therapy when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs: a. Increased sulfobromophthalein retention; b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability; c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG, free T4 concentration is unaltered; d. Decreased pregnanediol excretion; e. Reduced response to metyrapone test. **INFORMATION FOR THE PATIENT:** See Patient Labeling. **DRUG INTERACTIONS:** Reduced efficacy and increased incidence of breakthrough bleeding have been associated with concomitant use of rifampin. A similar association has been suggested with barbiturates, phenylbutazone, phenytoin sodium, tetracycline, and ampicillin. **CARCINOGENESIS, PREGNANCY, NURSING MOTHERS:** See Contraindications and Warnings. **ADVERSE REACTIONS:** An increased risk of the following serious adverse reactions has been associated with the use of OCs: Thrombophlebitis, pulmonary embolism; coronary thrombosis; cerebral thrombosis; cerebral hemorrhage; hypertension; gallbladder disease; benign hepatomas; congenital anomalies. There is evidence of an association between the following conditions and the use of OCs, although additional confirmatory studies are needed: Mesenteric thrombosis; neuro-ocular lesions, eg, retinal thrombosis and optic neuritis. The following adverse reactions have been reported in patients receiving OCs and are believed to be drug related: Nausea and/or vomiting, usually the most common adverse reactions, occur in approximately 10 percent or less of patients during the first cycle. Other reactions, as a general rule, are seen much less frequently or only occasionally: Gastrointestinal symptoms (such as abdominal cramps and bloating); breakthrough bleeding; spotting; change in menstrual flow; dysmenorrhea; amenorrhea during and after treatment; temporary infertility after discontinuance of treatment; edema; chloasma or melasma which may persist; breast changes: tenderness, enlargement and secretion; change in weight (increase or decrease); change in cervical erosion and cervical secretion; possible diminution in lactation when given immediately postpartum; cholestatic jaundice; migraine; increase in size of uterine leiomyomata; rash (allergic); mental depression; reduced tolerance to carbohydrates; vaginal candidiasis; change in corneal curvature (steepening); intolerance to contact lenses. The following adverse reactions have been reported in users of OCs, and the association has been neither confirmed nor refuted: Premenstrual-like syndrome; cataracts; changes in libido; chorea; changes in appetite; cystitis-like syndrome; headache; nervousness; dizziness; hirsutism; loss of scalp hair; erythema multiforme; erythema nodosum; hemorrhagic eruption; vaginitis; porphyria; hemolytic uremic syndrome. **ACUTE OVERDOSE:** Serious effects have not been reported following acute ingestion of large doses of OCs by young children. Overdosage may cause nausea, and withdrawal bleeding may occur in females. **HOW SUPPLIED:** Loestrin **21** 1/20 is available in compacts each containing 21 tablets. Each tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol. Available in packages of five compacts and packages of five refills. Loestrin **Fe** 1/20 is available in compacts each containing 21 white tablets and 7 brown tablets. Each white tablet contains 1 mg of norethindrone acetate and 20 mcg of ethinyl estradiol. Each brown tablet contains 75 mg ferrous fumarate, USP. Available in packages of five compacts and packages of five refills. Loestrin **21** 1.5/30 is available in compacts each containing 21 tablets. Each tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol. Available in packages of five compacts and packages of five refills. Loestrin **Fe** 1.5/30 is available in compacts each containing 21 green tablets and 7 brown tablets. Each green tablet contains 1.5 mg of norethindrone acetate and 30 mcg of ethinyl estradiol. Each brown tablet contains 75 mg ferrous fumarate, USP. Available in packages of five compacts and packages of five refills.

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Adolescent Mothers and Their Children in Later Life

By Frank F. Furstenberg, Jr., J. Brooks-Gunn and S. Philip Morgan

Summary

The popular belief that early childbearing almost certainly leads to school dropout, subsequent unwanted births and economic dependence is greatly oversimplified, if not seriously distorted: A longitudinal study of over 300 primarily urban black women who gave birth as adolescents in the middle to late 1960s shows that a substantial majority completed high school, found regular employment and, even if they had at some point been on welfare, eventually managed to escape dependence on public assistance. Relatively few ended up with large families; most had fewer births than they had wanted or expected at the time they first became pregnant.

The study also found that the pathways to success were surprisingly diverse. Although young women who gave birth at an early age were disadvantaged when compared with their peers who bore children later, huge variability existed. Teenage childbearing lowered the women's likelihood of economic success and increased their likelihood of having a large family. However, the women who had more economically secure and better-educated parents were more likely to succeed—perhaps as a result of receiving a greater amount of direct aid and having other family resources available. In addition, differences in educational motivation and performance were especially important factors. Young mothers who had been doing well in school and who had had high educational aspirations at the time of their first birth were much more likely than others to be successful later.

Additional births at young ages also constrained the mothers' ability to attend school and accrue job experience. Women who had more children in the five years after their first birth did less well in school, had lower aspirations and came from more disadvantaged families than did women who curtailed their fertility. However, even when such factors were controlled for, subsequent fertility lowered the chances of economic success in later life.

Changes in the mothers' life courses affected some aspect of their children's behavior at all ages, but there was no simple or recurring pattern of influence. For example, a mother's welfare receipt was associated with behavior problems in her child during the preschool years, but not later on. In contrast, the mother's marital status was not related to behavior problems during the preschool period but was clearly related to such problems during the child's adolescence.

Introduction

Until the 1970s, premarital sex was largely limited to the courtship sequence, but in the succeeding years, many teenagers began to have sexual intercourse while having no intention of marrying. By the end of the 1970s, half of all unmarried 17-year-olds and more than two-thirds of all unmarried 19-year-olds living in metropolitan areas had had sexual intercourse.[1] When concern over these changes was first expressed, attention was focused on the black family, mainly because the changes that had occurred within the black family were especially dramatic. For example, between 1960 and 1984, the proportion of 18- and 19-year-old black women who were married fell from close to one-third to less than three percent.[2] By 1984, 89 percent of children born to black teenagers were born out of wedlock.[3] However, recent trends suggest that blacks may simply have been pacesetters for the general U.S. population: Marriage rates have declined sharply among whites, and their rates of out-of-wedlock childbearing have grown.[4]

Some early research on the impact of teenage parenthood appeared to demonstrate that adolescent mothers were more likely than women who gave birth in their 20s to experience economic hardship and family disruption.[5] It was widely assumed that many disadvantages associated with premature childbearing would be transmitted to the children, but such a process has not been as well documented. Almost all investigators agree that the children of teenage parents may be at a disadvantage compared with the offspring of parents who delay childbearing, in part because the former are so much more likely to grow up in poor, single-parent households.[6]

However, while early childbearing increases the risk of ill effects for mother and child, it is unclear that the risk is so high as to justify the popular image of the adolescent mother as an unemployed woman living on welfare with a number of poorly cared-for children. To be sure, teenage mothers do not manage as well as women who delay childbearing, but most studies have shown that there is great variation in the effects of teenage childbearing.[7]

Because most research has not followed teenage mothers over a significant proportion of their adult lives, it is difficult to understand precisely how events in early life influence adult adjustment.[8] Similarly, current research may overestimate the impact on children of having teenage parents: Being born into poverty is regarded by many investigators as tantamount to a life sentence of adult disadvantage. Policymakers and professionals who seek to ameliorate the adverse effects of early parenthood should focus on assessing the coping strategies adopted by some adolescent parents and their children. Al-

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though a considerable amount of research has addressed the antecedents and consequences of adolescent childbearing, the application of this knowledge to program interventions has been modest.[9] A closer look at the process by which some teenage parents manage to do well in later life may reveal how much of their success is explained by individual determination and how much by social support, the provision of social services or other factors.

This article describes the results of a long-term study of the experiences of adolescent parents (and their children) from the Baltimore area. The study began in the mid-1960s. Its initial phase analyzed the women's experiences over the first five years after delivery to determine the effects of early childbearing on the transition to adulthood.[10] Although the results of this analysis left no doubt that early childbearing profoundly influenced the educational, occupational and marital experiences of young women, the five-year study also demonstrated that some women were affected more negatively than others.

Methodology

The initial study began as an evaluation of a comprehensive health care program for adolescent mothers run by Sinai Hospital in Baltimore. Between 1966 and 1968, 404 pregnant teenagers who had never had a child were interviewed; 350 were reinterviewed one year after delivery, 363, three years afterward and 331, five years after. The last of these follow-up visits were made in 1972, and the idea of revisiting these families was not considered until 10 years later. A small feasibility study carried out in 1982 demonstrated that over 90 percent of the former respondents could be tracked down and reinterviewed, even though almost all had moved since the investigators' last contact with them.

The final interviews were conducted in 1984. Questionnaires were prepared both for the mothers and for their children; some questions were retained from the survey used in 1972, and others were taken from the National Survey of Children (NSC), a study of the well-being of a national sample of youth conducted in 1981. After eight months of fieldwork, 322 families were interviewed (89 percent of those who had last been seen in 1972, and 80 percent of the original sample). A surrogate parent was interviewed in 33 cases in which a child could be located but the child's mother was untraceable, imprisoned or no longer alive. Half of the women surveyed had moved four or more times since the child's birth, and one-third had lived for a time outside of Baltimore. Nevertheless, the participants who were located and interviewed undoubtedly represent the less mobile segment of the original sample. Ninety percent of the adolescent mothers were black; as a result, some of the analyses in this article are restricted to blacks, because the white sample was too small to study.

Although the original study participants had not been selected to represent pregnant Baltimore youth, a comparison of the demographic characteristics of the adolescent mothers with local census and vital statistics data of the time indicates that the young women were reasonably representative of women under the age of 18 who delivered a child in the middle to late 1960s at one of Baltimore's hospitals. However, even though the sample may have been fairly typical, it included only teenagers who became pregnant between 1965 and 1967; their situation may have been very different from that of pregnant teenagers today. For example, because abortion was illegal at the time, most of the participants had had little chance to terminate their pregnancies. In addition, during the 1960s, early childbearing often was not considered a problem so long as it was accompanied by marriage, and many young women married in order to avoid the stigma attached to unwed parenthood. Finally, at the time the Baltimore mothers gave birth, special services for adolescent mothers were less readily available than they are now. Thus, we must recognize that the life courses of adolescent mothers today may differ from those of the women in this study.

Following the round of interviews conducted in 1972, the adolescent mothers were compared with a group of classmates who had not given birth as teenagers, in order to determine the impact of early childbearing on their lives. Unfortunately, such a strategy could not be adopted in the follow-up study conducted in 1984. Instead, we compared the characteristics and responses of study participants with those of urban women aged 29–36 with at least one child who were interviewed in the 1983 Current Population Survey (CPS), the 1982 National Longitudinal Survey (NLS) and the 1982 National Survey of Family Growth (NSFG).

Education and Marriage

Since nearly all of the study participants were in their middle teens when they first became pregnant, the five-year follow-up took place when they were in their early 20s. At that time, most of the young women were struggling to remain in or return to school, to enter the job market and to raise a child. (Their experiences are described in more detail in an earlier account of the study.[11]) Many of the women interviewed in 1984 said that in retrospect, they did not understand how they were able to get through those difficult years.

Most studies examining patterns of dropout following pregnancy or delivery have assumed that leaving school is tantamount to terminating education. The long-term follow-up indicates, however, that a surprising amount of educational activity took place in the decade between the final two interviews: Fifty-six percent of the women reported that they had attended school for at least part of one year during that time, and one-quarter of these women had attended school for two or more years during their 20s and early 30s. Although only 50 percent of the young women had graduated from high school by 1972, 67 percent had obtained their diplomas a decade later.

By 1972, about 10 percent of the young women had received some postsecondary education. By 1984, 30 percent of the women had taken at least some postsecondary courses, and five percent had graduated from college. Since nine percent of the young women reported that they had attended school in the year preceding the 1984 interview, the women's overall level of educational attainment may rise even further.

Although those who had dropped out of school before becoming pregnant obtained less education than did the others, slightly more than half of such women did manage to complete high school eventually. Evidently, dropping out at an early age reduces but does not foreclose a young mother's chances of obtaining further schooling. The individual interviews revealed that many teenage mothers were able to resume their education only after their youngest child entered school.

The five-year follow-up demonstrated that the young mothers were much more likely than their classmates to drop out of school and much less likely to go to college. At the time of the long-term follow-up, the young mothers still were not as likely to have attained their high school degrees as their classmates had been more than 10 years before. Although we can only guess how much higher the classmates' academic achievement would have been had they been reinterviewed in 1984, a comparison between the young mothers and the respondents to the CPS, NLS and NSFG may give some indication. Because there were relatively few white women in the Balti-

Table 1. Socioeconomic characteristics of black female participants in the Baltimore study (aged 29–36 in 1984 and having at least one child) and of comparable samples from the 1983 Current Population Survey (CPS), the 1982 National Longitudinal Survey (NLS) and the 1982 National Survey of Family Growth (NSFG), by age at first birth

Characteristic	Survey and age at first birth						
	Baltimore study	CPS*		NLS*		NSFG*	
	14–19 (N=258)	14–19 (N=242)	≥20 (N=233)	14–19 (N=252)	≥20 (N=231)	14–19 (N=289)	≥20 (N=310)
Mean age	32.7	32.2	32.7	32.1	32.2	32.3	32.4
% graduated from high school	70.5	73.4	86.3	59.0	86.2	69.9	87.9
Mean years of schooling completed	12.0	12.3	13.1	11.4	12.8	12.0	13.3
% currently married	30.2	35.1	47.9	37.5	57.2	32.2	56.9
First marriage	80.8	u	u	82.0	91.0	73.7	88.3
Remarried	19.2	u	u	18.0	9.0	26.3	11.7
% previously married	45.7	41.5	32.9	45.4	23.3	43.3	26.1
% never married	24.0	23.5	19.3	17.1	19.5	24.5	17.0
Mean no. of children	2.3	2.7	2.0	2.9	1.9	2.9	2.0
% currently employed	67.8	56.1	65.6	61.5	71.8	63.7	70.3
% who received welfare in past year	29.1	u	u	29.7	14.3	27.5	20.0
Family income							
<$15,000	52.8	61.7	51.2	61.9	41.1	54.6	35.0
$15,000–$24,999	23.6	19.4	20.4	18.6	19.3	20.9	22.6
≥$25,000	23.6	18.9	28.4	19.4	39.6	24.5	42.4

*Respondents residing in metropolitan areas only. Data have been weighted to represent national population.
Note: u=unavailable. Ns shown in this and subsequent tables are unweighted.

more study, only the educational experience of black women can be examined in this way. By the time of the 1984 interview, 71 percent of the black Baltimore mothers had graduated from high school, and the entire group of women had attained an average of 12 years of education (see Table 1). In comparison, 73 percent of black adolescent mothers in the CPS had finished high school, as had 70 percent of comparable NSFG respondents and 59 percent of NLS participants. Thus, the educational experience of the Baltimore women was similar to that of the larger population of black teenage mothers who had had their first birth in the mid-1960s. However, such women were less likely to have completed school than were women who had not had their first child until age 20 or older (86 percent among respondents to the CPS and NLS and 88 percent among NSFG respondents). The older childbearers also attained a year more of education, on average.

Given that young women who become pregnant are often the less able and less motivated students, we had expected the disparity in educational attainment to have been greater. On the other hand, these comparisons have of necessity been confined to black women, and since black teenagers who become pregnant are less likely to marry or to leave school than are whites,[12] they may be less handicapped educationally by early parenthood. Nevertheless, we believe that the Baltimore women would undoubtedly have received more schooling had they postponed childbearing.

The majority of the women who participated in the study had married by the age of 20; at the time of the five-year follow-up, close to two-thirds of these young women had married, compared with just one-fifth of their classmates. However, more than half of the early marriages had dissolved, and of those that were still intact, a substantial proportion were reported to be severely troubled. Moreover, many of the women who were single in 1972 despaired of their chances of finding a partner.

Data from the long-term follow-up for both black and white women indicate that by 1984, only 22 percent of the women had never married, and many of these were living with someone or had done so in the past. However, the women who managed to form a stable marriage were exceptions. Thirty-four percent of the women were married at the time of the interview, and a quarter of those had been married more than once; 44 percent had been married but were not at the time of the interview. Only 16 percent of the women had remained married to the father of their first child.

The net result of such a high degree of impermanence is that while the proportion of women who had ever been married rose between 1972 and 1984, the actual proportion currently married remained almost the same—36 percent in 1972, 34 percent in 1984. Many of the women who were unmarried at the time of the 1984 interview complained about the impossibility of finding eligible men, a situation that has been confirmed by several studies.[11]

A comparison with the results of the three national surveys shows that the participants' marital experiences are similar to those of adolescent mothers nationally: As Table 1 shows, 30 percent of the black Baltimore women were currently married at the time of the most recent interview; comparable proportions were 32 percent in the NSFG, 35 percent in the CPS and 38 percent in the NLS. In contrast, the women who did not have their first birth until after age 20 were more likely to be currently married—57 percent in the NLS and NSFG and 48 percent in the CPS. They also were more likely ever to have been married than were respondents to the CPS and NSFG, and less likely to have been divorced, even after correction is made for differences in the timing of first marriage.

Fertility and Contraceptive Use

Most of the young mothers grew up in large families, and while their family-size preferences at the start of the study were modest, close to half wanted to have three or more children. By the time of the five-year follow-up, many women faced the prospect of having more children than they had wanted or expected: Close to one-third had been pregnant two or more additional times, and one-sixth already had had three children; more than half had already had as many children as they had claimed to want five years before. While almost all of these women had tried using contraceptives, only one-fifth were reliable users. More discouraging was the finding that over half of the single women who were working or in school and who explicitly said that they did not want any more children at the moment were not using birth control regularly.

The combination of relatively high fertility after five years and irregular use of contraceptives led us to expect that, a decade later, these young women would have had far more children than they intended. But we were wrong. Many of the women (43 percent) ended up with fewer children than they had said they wanted in 1972.

Overall, 61 percent of the additional

births that the women had over the duration of the study occurred within five years of their first birth; on average, the women had 0.81 births in the first five years but only 0.52 additional births in the next 12 years. Only 13 percent of the women gave birth in the five years preceding the 1984 interview. These findings are in line with those of other recent research.[14]

The means by which these women limited their fertility after 1972 bear examination. First, induced abortion became legally available throughout the United States shortly after these women were reinterviewed. Although self-reported data tend to yield underestimates of abortion utilization, the women were twice as likely to have obtained abortions after 1972 as they had been before that. Among those with one prior birth, the ratio of abortions to live births rose from 0.10 before 1972 to 0.27 after 1972; comparable levels among women with two previous births were 0.19 and 0.39, and levels among those with three children were 0.25 and 0.64.

Another important reason why the women did not have a large number of children over the 12-year period between interviews was the high incidence of voluntary sterilization. Fifty-seven percent of the women had been sterilized—56 percent of blacks and 68 percent of whites. Among black women with three or more children, 72 percent had been sterilized by 1984, compared with 54 percent of those with two children and 37 percent of those with none or one. (Similar comparisons of white women could not be made because of small sample sizes.)

Most of the women who were interviewed expressed few reservations about sterilization. Having begun childbearing 5–10 years before many of their peers, they elected to conclude childbearing 5–10 years earlier as well. As a result, the women in the study managed to limit their fertility to levels comparable to those found among women who had delayed the birth of their first child. As Table 1 shows, the black study participants had had an average of 2.3 children, compared with 1.9–2.0 among women in the three national surveys who bore their first child after age 20. Surprisingly, the women in the study had had fewer children than had comparable adolescent mothers in the national samples (2.9 in the NSFG and NLS, 2.7 in the CPS). Among the possible explanations for this discrepancy are regional differences in fertility, fewer years spent in marriage and a better chance of obtaining sterilization at an early age because of the large number of medical facilities in the Baltimore area.

Economic Status

Public concern over teenage childbearing is based partly on the belief that it is a nearly certain path to poverty and welfare dependence. After the first five years of this study, such concerns seemed well-founded. Close to one-third of the young women were receiving welfare at that time (compared with fewer than five percent of their classmates who had not given birth as teenagers), and a similar disparity existed in employment. However, the prognosis at the five-year point was somewhat worse than the actual outcome. In contrast to the popular stereotype, most of the teenage mothers did not become chronic welfare recipients, and many found steady employment.

As of 1984, slightly fewer than one-quarter of the women had received public assistance in the previous year. Although 70 percent of the women had received welfare at some point during the 17-year study, close to two-thirds of them were not receiving public assistance in 1984. Only 12 percent of those who went on welfare during the first five years of the study were still receiving public assistance in 1984. Furthermore, two-thirds of the women had not received public assistance during any of the five years preceding the 1984 interview. A life-table analysis of the women's welfare experience shows that the probability of their becoming welfare recipients rose rapidly in the first few years after their first birth and then leveled off. However, the probability of the women's leaving the welfare rolls rose even more steeply in the early years of the study; within three years, more than half of those on public assistance had ceased receiving payments. Clearly, chronic or near-chronic welfare dependency was the exception rather than the rule among the women in our study. These findings support those of other researchers who have shown that most welfare recipients use public assistance as a temporary support and abandon it as soon as circumstances permit.[15]

A comparison with national samples indicates that the proportion of welfare recipients in our study group was about average (see Table 1). Twenty-nine percent of the black women in our sample had received welfare in the preceding year, compared with 30 percent of comparable NLS participants and 28 percent of NSFG respondents. In contrast, 14 percent and 20 percent, respectively, of NLS and NSFG respondents who had not had their first child until after age 20 had received public assistance in the previous year. The modesty of these differentials may be explained by the fact that women with young children are most likely to rely on public assistance for a short period of time, and the comparison is confounded by the fact that the adolescent mothers had their children years before the others.

The occupational careers of the adolescent mothers generally paralleled their welfare experience. About one-third were employed within a year of the birth of their first child, and another third began working in the second year after childbirth. Nevertheless, by 1972, the young mothers were less likely than their classmates to have been employed (45 percent compared with 59 percent), although their classmates were more likely to still be students. The classmates who did not give birth as teenagers were also more likely to be holding better, higher paying jobs.

The employment status of the adolescent mothers improved during the second segment of our study. In 1983, the last full year for which we could obtain data, 72 percent of the women held jobs, and 60 percent had worked in each of the five preceding years; in contrast, in 1967, only 40 percent were working. Our interviews with these women also revealed that they switched jobs very infrequently. Eighteen percent had had only one job over the entire 17 years of the study, and more than half of the women who were employed in 1984 had held the same job for five or more years. While some women attributed their job stability to contentment with their employment, many did not feel that they had any options: Three out of five said that it would be extremely or fairly difficult for them to find another job.

Almost all of the women who were working in 1984 were employed full-time (30 hours per week or more). Before deductions, the average hourly wage among these women was $6.40, which yields an average annual income of a little more than $13,000. (This total assumes that the women worked full-time throughout the year, with no periods of unemployment. Many of the women were in fact underemployed, so their actual earnings fell short of this total.) One-third of the women had an annual income below $10,000, which represents the poverty level for a family of four. Most of the women held unskilled or semiskilled jobs in the service sector of the economy. Forty percent of the women were the exclusive breadwinner in their families, and another 24 percent said that theirs was the principal source of income.

Comparisons with the national samples of women who did not have children as teenagers reveal sizable differences in income (see Table 1). Women who had children later were only slightly more likely than the adolescent mothers to have been employed, but were more likely to have a family income higher than $25,000; conversely, fewer were poor.

Pathways to Success

The adolescent mothers studied here were all very similar in background—they were mostly black, of approximately the same age and family background and from the same city. However, there were enormous variations in the lives of these young women. Given similar origins, how may one explain the broad array of outcomes observed among the adolescent mothers in this study? We have organized our analysis around two key indicators of well-being in 1984—economic status and fertility. Focusing first on economic status, we examine the impact of background characteristics, educational attainment, marital experience and fertility by entering these variables sequentially into a multivariate analysis.* A complete depiction of the interrelationships of these many variables can be found in the full report on this study.[16]

Some of the factors had substantial direct effects (as shown in Table 2), while others had only indirect effects. For example, having had a large number of siblings had no direct influence on an adolescent mother's later economic situation. However, by increasing the likelihood that a woman would have two more children in the first five years of the study by a factor of 3.6 (significant at p=0.01, not shown), this variable had an indirect impact; having had a large number of children in the first five years, in turn, directly raised the likelihood that a young woman was receiving welfare at the time of the 17-year follow-up by a factor of 2.9 (p=0.03, see Table 2). Likewise, having a large number of siblings increased by 2.5 the chance that a young mother had not finished high school by five years after the start of the study (p=0.05, not shown), which also doubled the likelihood that she was receiving welfare at the time of the most recent follow-up. Thus, coming from a large family seems to result in a significant long-term disadvantage, operating through the lower education and higher fertility.

The strongest direct impact was that of low parental education, which quadrupled the likelihood that a young mother would be on the welfare rolls (p=0.001). However, we were surprised that background variables did not have a more pervasive impact on the life course. For example, low parental education was not strongly associated with the pregnant adolescent's own grade level or her educational aspirations. It is not clear why this was so; it could be that higher parental education has its effects by reducing the likelihood of a young woman's having early sexual intercourse and by increasing the likelihood of her practicing contraception or having an abortion. In other words, parental education may have an important effect on the likelihood that a young woman would be in our sample in the first place, but once she has become pregnant, it has little additional influence.

Having received welfare as a child increased by a factor of three (p=0.01) the chance that an adolescent mother would receive public assistance in the first five years after childbirth; having received welfare at that point increased the risk of being on welfare at the last interview by 60 percent, although this association was weaker than many others. This pathway is consistent with popular theories holding that those who receive welfare while growing up are also very likely to receive it as adults, mainly because such individuals are raised in an environment in which public assistance is condoned. However, we found that respondents' attitudes about welfare did not differentiate those who received welfare from those who did not; we believe that this pattern simply represents the reduced resources of these families. Further, we could find no link between living in a welfare household as a child and welfare dependence at the time of the 17-year follow-up net of welfare use immediately following the first birth. Evidently, if a woman escaped welfare early in life, she was no more likely than any other woman to receive public assistance.

Another factor that had a large and significant influence on the economic status of an adolescent mother was her academic competence when she was in school. Women who were below grade level at the start of the study were four times as likely as those who were at or above grade level to be experiencing economic hardship in 1984. Of course, being at grade level is clearly associated with higher initial educational aspirations, which had a set of important indirect effects: Those with low aspirations were twice as likely as more highly motivated young women to have been on welfare during much of the first segment of the study, more than twice as likely to be unmarried, over three times as likely to have had additional children in the first five years after the start of the study and four times as likely not to have finished high school by the five-year follow-up.

High educational aspirations also increased the likelihood that a young woman would have attended Edgar Allan Poe School, a facility for pregnant teenagers that stresses the importance of finishing school and delaying subsequent births. Students at Poe School were over twice as likely to have been using birth control a year after their first child was born and were only one-third as likely to have been receiving public assistance in 1984. Thus, the special school for pregnant girls helped prevent disadvantage in later life, a result that cannot be explained purely by selective recruitment. This finding is one of several we uncovered that offer strong evidence that services provided around the time of the first birth can make a difference in lowering the long-term risk of economic dependency.

Women who were not married at the five-year follow-up were over three times as likely to be receiving public assistance in 1984. Marriage itself appears to contribute little to a woman's economic chances, however; those who were married at the time of the first or second interview were no more likely to have avoided welfare dependency in adulthood. Only those who married early and *stayed* married escaped economic disadvantage.

Not using birth control also had a modest direct impact on economic dependency, in that women who were not regularly using contraceptives a year after the birth of their first child were one and one-half times as likely as others to be receiving public assistance at the 1984 follow-up. Possibly, reliance on birth control is a measure of the degree of determination felt by the young mother, given its association with educational ambition and the likelihood of finishing high school.

We used the same analytic strategy that we applied to economic status to examine which variables affected the likelihood that an adolescent mother would subsequently have three or more children. The only major difference was that the variable representing high additional childbearing in the first five years was replaced with one representing the likelihood of having a second child within two years of the first. The latter variable was by far the most important

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*The following variables were entered into the regression: Low parental education, large parental family, living on welfare as a child (background factors); schooling below grade level and low educational aspirations (at the time of first interview); continuously in school, attendance at Poe School, not using birth control and participation in the Sinai program (at one-year follow-up); and not finishing school, high additional childbearing, not married, on welfare (at five-year follow-up).

Table 2. Direct determinants of the likelihood that an adolescent mother will be receiving welfare or will have had three or more children at the time of the 17-year follow-up

Determinant	Ratio	Explanation	Significance level
Likelihood of receiving welfare			
Low parental education	3.9	Almost four times as likely if parents' education is 9th grade or less	p=0.001
Below grade level	3.9	Almost four times as likely if woman was below grade level when she became pregnant	p=0.003
Attending Poe School	0.37	Less than half as likely if woman attended Edgar Allan Poe School after first birth	p=0.16
Not using birth control	1.5	Fifty percent more likely if woman was not using birth control one year after first birth	p=0.34
High additional childbearing	2.9	Almost three times as likely if woman had two or more additional children within five years of first birth	p=0.03
Not married at five-year follow-up	3.3	More than three times as likely if woman was not married at five-year follow-up	p=0.03
Received welfare during five years after first birth	1.6	Sixty percent more likely if woman received welfare during five years after first birth	p=0.12
Not high school graduate	1.9	Almost twice as likely if woman had not finished high school by five-year follow-up	p=0.15
Likelihood of having three or more children			
Second child born within two years of first	8.7	More than eight times as likely if second child was born within two years of first	p=0.00
Received welfare during five years after first birth	2.1	More than twice as likely if woman received welfare during five years after first birth	p=0.06
Continuously in school	0.36	More than 60 percent less likely if woman remained in school throughout pregnancy and following year	p=0.04
Not using birth control	2.0	Twice as likely if woman was not using birth control one year after first birth	p=0.08
Below grade level	1.9	Almost twice as likely if woman was below grade level at time of first pregnancy	p=0.17
Low educational aspirations	1.5	Fifty percent more likely if woman intended little additional schooling at time of first pregnancy	p=0.30

influence: As shown in Table 2, women who bore another child within two years of their first were nearly nine times as likely as others to have had three or more children by 1984. Measures of personal competence and educational motivation had modest direct effects; women who were below grade level at the time of their first pregnancy were almost twice as likely to end up with three or more children, while those who remained in school during their pregnancy and returned to school after their first birth were 60 percent less likely. In contrast, women who received welfare over the first five years were roughly twice as likely to have had three or more children.

Clearly, these results show that early childbearing is unlikely to establish a pattern of rapid family building if adolescent mothers remain in school, receive family planning assistance and avoid another birth in the next few years. In contrast, young women who enter parenthood with severe educational deficits are at the greatest risk of dropping further behind, of becoming reliant on welfare and of bearing additional children quickly. Although this pessimistic scenario applied to only a small number of women in our study, such women probably consume a large share of all social welfare services.

The Children of Teenage Mothers

Popular accounts of teenage childbearing rarely fail to mention its devastating consequences for the children of adolescent mothers. In point of fact, however, little is known about the life course of children of teenage parents; two recent reviews have shown that the connections between the mother's life experience and that of her child have not been elucidated.[17] The 17-year follow-up of Baltimore women was intended to identify some of these links.

Of the 404 pregnant women who were studied initially, 15 had children who died, and another 15 children were adopted early, leaving 374 potential respondents. A total of 296 children (79 percent of those available, or 73 percent of those born to the study participants) actually participated in the 17-year follow-up. There were 10 cases in which a mother was interviewed but her child was not: Six children refused to be interviewed, three were retarded and one was away throughout the study. In 264 cases, the child and the child's biological mother were interviewed; in 30 cases, a surrogate parent was interviewed along with the child; and in two cases, the child alone was interviewed. The average age of the children at the time of the interview was 16.4 years; 91 percent were black.

All but nine percent of the children reported that they had lived with an adult man at some point in their lives. Fifty-two percent said that they had never lived with their biological father, while only nine percent had lived with him for all 16 years. Eighty-five percent, on the other hand, had spent some time living only with their mother, and 45 percent lived for a time with their mother and a stepfather. Twenty-three percent of the children who were interviewed had spent less than a quarter of their lives in a household in which there was an adult man, while only 29 percent spent more than three-quarters of their lives in such a household.

To determine whether the experiences of these children differed substantially from those of their peers, we compared some of these data with similar data from the National Survey of Children (NSC). Among black 15–16-year-olds interviewed in 1981, 23 percent of the children of adolescent mothers and 38 percent of other children were living with their biological fathers, as were 14 percent of the Baltimore sample. The comparable proportions living with a stepfather (17 percent, six percent and 22 percent) indicate that the Baltimore respondents were somewhat more likely to have been living with a stepfather.

Some children reported that they had a paternal relationship with someone other than their biological father. For example, one-third of the children who were not living with their biological father at the time of the interview said that they considered someone else (a former or current partner of their mother, a relative or a friend) to be "like a father" to them. Nineteen percent were living with such a person, and half of those who were not living with him saw him at least once a week. In all, 15 percent of the children not living with a father or a father figure in the home received substantial attention from a surrogate father outside the home.

It should come as no surprise that children living with their biological father or with a surrogate father were far better off economically than were those living in female-headed households. Sixty-six per-

Table 3. Percentage of black adolescents aged 15 and 16 behaving in various ways, by survey and mother's age at first birth

Behavior	Survey and age		
	Baltimore	NSC	
	14–19 (N=202)	14–19 (N=35)	≥20 (N=61)
School achievement			
Ever repeated a grade*	53	43	20
Above-average class standing*	26	29	31
School problems			
Parents brought to school because of behavior in past year†	41	40	17
Parents got note about behavior in past year*	56	54	23
Skipped school in past year†	29	29	10
Suspended or expelled in past five years*	49	37	23
Fought at school in past year†	28	37	17
Damaged school property in past year†	3	17	3
Personal behavior			
Stayed out too late in past year†	74	74	68
Lied to parents about something important in past year†	56	54	45
Hurt someone seriously in past year†	16	14	13
Ever ran away from home†	23	6	0
Ran away from home in past five years*	17	3	0
Stole something in past year†	10	20	6
Stole something in past five years*	16	17	6
Ever stopped by police†	33	29	20
Ever stopped by police*	26	26	10
Felt child needed emotional, mental or behavioral help in past year*	12	3	3
Substance use and sexuality			
Ever smoked cigarettes†	50	46	47
Ever drank alcohol†	54	46	47
Got drunk in past year†	21	17	11
Ever smoked marijuana†	44	26	24
Ever tried other drugs†	4	3	0
Ever engaged in sexual intercourse†	78	57	39
Ever been pregnant†	11	14	0

*Parental reports. †Child's reports.

Note: "Don't know" and "no answer" were eliminated from sample. NSC samples were weighted to correct for oversampling. In order to make Baltimore data comparable to NSC data, all 17-year-olds were excluded.

cent of those living with a biological father had a family income of over $25,000, compared with 41 percent of those living with stepfathers, 12 percent of those whose mothers were living with a boyfriend and eight percent of those whose mothers were not living with any partner. In contrast, nine percent of families in which the biological father was present had an income of under $15,000, compared with over a quarter of those in which a stepfather or boyfriend lived in the household and about two-thirds of families in which the child's mother had no male partner.

Of all the potentially deleterious outcomes of early parenthood, the child's academic performance may be most significant, especially since school failure was a potent predictor of later economic dependency among the mothers. Over 200 of the children had been tested between the ages of 3 1/2 and 5 1/2, using the Caldwell Preschool Inventory (a measure of a child's readiness for school, designed to evaluate participants in the Head Start program). Half had tested above the 50th percentile, which is similar to other samples of black urban preschoolers. Nonetheless, children born when their mothers were in their 20s performed somewhat better, indicating that the children of teenage mothers were at some disadvantage.

However, when we examined the school performance of the children at the time of the 17-year follow-up, what we found can only be described as massive school failure. Ninety-two percent of the children were enrolled in school in 1984, but half had already repeated at least one grade. Only one-quarter of the mothers said that their child was above average in school, and 61 percent of the children reported that they were C or D students. (When we compared these reports with the evaluations of the teachers of many of these children, we found that their own estimates of their school progress and class standing were quite accurate.)

Thirty-six percent of the children also revealed that they had had to bring their parents to school in the past year because of a disciplinary problem; 34 percent had skipped school in the previous year, and 28 percent had fought at school. According to the parents, 44 percent of the children had been suspended or expelled in the past five years. Boys were more likely than girls to have been suspended (51 percent compared with 37 percent) or to have had disciplinary problems (61 percent compared with 43 percent).

Table 3 contrasts behavioral factors among 15–16-year-old black children of the Baltimore women with those among comparable NSC respondents. Overall, children of adolescent mothers experienced greater problems than the children of older mothers. For example, in the NSC, the children of teenagers were twice as likely as the children of older mothers to have repeated a grade (43 percent compared with 20 percent), while 53 percent of the Baltimore children had done so.

Other school problems were more prevalent among the offspring of teenage mothers as well. About half of the Baltimore adolescents had been suspended from school in the past five years, as opposed to 23 percent of the children of older mothers. They were also more likely to have skipped school, fought with other students and caused their parents to be called to school because of their behavior. In sum, adolescents whose mothers were teenage parents are at very high risk of having problems in school.

In terms of achievement and expectations, the costs of grade failure appear high. Among all of the study teenagers, those who had repeated a grade were more likely to have dropped out of school (12 percent vs. five percent), more likely to have been in remedial classes (25 percent vs. 10 percent) and less likely to have been in a college preparatory class (10 percent compared with 45 percent). Grade failure was also associated with behavior problems: Adolescents who had repeated a grade were more likely to have had school discipline problems (68 percent vs. 37 percent), to have been suspended from school (64 percent vs. 25 percent), to have been in trouble at school (37 percent vs. 10 percent) and to have received counseling in the past five years (34 percent vs. 13 percent).

Grade failure also was associated with early sexual experience: Although the likelihood that an adolescent girl had had intercourse, had used birth control or had had a child was unrelated to having repeated a grade, those who had repeated were twice as likely to have become pregnant as those who had not done so (32 percent compared with 18 percent). Similarly, while the likelihood of a boy's having had intercourse or having impregnated a girl was not related to grade failure, those who had repeated a grade were much less likely to have used birth control (two percent vs. 25 percent).

When the Baltimore children were four years old, they were tested on several measures of emotional behavior—trust in others, self-esteem and ability to delay gratification. In all, they fared quite well, with their behavior falling well within the normal range. However, by 1984, the youth were exhibiting relatively high rates of misbehavior: Twenty-three percent had run away from home at least once, 19 percent had hurt someone seriously in the previous year and 11 percent had stolen a major item in that time. One-third had been stopped by the police at least once, and 32 percent of parents said that their children needed emotional or mental help (12 percent) or had received it (20 percent) in the previous year. The Baltimore teenagers also engaged in drinking and drug use. Sixty percent of all of the teenagers interviewed said that they had drunk alcohol, 25 percent had been drunk in the previous year and 46 percent had smoked marijuana (not shown).

As can be seen in Table 3, black children born to older women were substantially less likely to drink or use drugs than were those born to adolescent mothers. Likewise, black 15–16-year-olds in the Baltimore study were much more likely to have engaged in sexual intercourse than were comparable children born to older mothers: Table 3 shows that 78 percent of these young people had had intercourse, compared with 57 percent of the NSC respondents born to adolescent mothers and 39 percent of those born to older mothers. (The sexual activity rates reported by the Baltimore teenagers are comparable to those described in other research on urban youth.[18]) In addition, first sexual intercourse typically occurred at a very young age: One-third of the boys had first had sex by age 12, and two-thirds had done so by age 14; although only 17 percent of girls said that they had first had intercourse by age 14, the proportion climbed to 60 percent by age 16. However, just 47 percent of the boys and 35 percent of the girls had had intercourse in the month preceding the interview, indicating that intercourse for many of these young people tends to be quite irregular.

Of the youth who had ever had sex, 72 percent said that they had used birth control at the time of their most recent act of intercourse; girls and boys were equally likely to have done so. Predictably, teenagers under 16 were less likely than older ones to have used contraceptives (43 percent compared with 78 percent). Sixty percent of the respondents said that they always or almost always used birth control.

What influence had the young people's parents had on their contraceptive practices? The mothers were not hesitant to discuss sex with their children: Ninety-three percent said that they had done so, and a similar proportion said that parents should discuss birth control with their children. The mothers often transmitted vague information, such as the "need for protection." However, they were more likely to be specific with their daughters, and many emphasized that they did not want their daughters repeating their mistake.

Since some of the children had not reached their 17th birthday by the time of the interview, it is too early to know how many of them will also become school-age parents. Sixteen percent of the young people who were interviewed said that they had been pregnant or had impregnated someone—26 percent of the girls and only seven percent of the boys. However, the latter percentage should not be considered completely reliable, as girls may not tell their partners about a pregnancy, especially if they plan to have an abortion. In addition, historical changes in sexual patterns (particularly the increase in the proportion of people who have multiple partners) make it less likely that young men will know that they have fathered a child. Finally, about half of all births to teenage girls may involve fathers in their early 20s.

Intersecting Life Courses

Economic resources determine much of the variability in a child's environment. For example, children who are reared in poverty are more likely to live in unsafe neighborhoods, to attend poor-quality schools and to associate with peers who do not value education or the delay of sexual activity. As we have seen, the economic resources of an adolescent mother are in turn greatly affected by her marital status, education, degree of motivation and other characteristics. We have sought to determine how the economic situation, marital status, educational attainment and fertility experience (both number and spacing of births) of the adolescent mothers affected the lives of their children.

The primary indicators of the child's well-being included academic success, sexual experience, misbehavior and psychological functioning. Whites were excluded from the subsequent analyses because their numbers were so small. The experiences of boys and girls have been combined because our analyses indicated that influences on children's well-being were essentially the same for both sexes.

We found only weak relationships between the children's well-being as infants and maternal characteristics. Although low birth weight was associated with low one-minute Apgar scores, neither measure was affected by maternal characteristics; furthermore, welfare recipients and unmarried women were only slightly less likely than other women to have made frequent prenatal visits during pregnancy.

At the five-year interview, however, some important differences began to appear. For example, children whose mother received public assistance averaged 10 points lower than the others on the Caldwell Preschool Inventory scale.* Likewise, a child whose mother was unmarried or who already had a sibling scored eight points lower, on average, and a child whose mother had not returned to school for at least two years after his or her birth scored four points lower. When these influences are considered simultaneously, the results indicate that a child whose mother had three children, was unmarried, was receiving welfare and had not gone back to school after the first child's birth would score some 30 points lower on the scale than would a child whose mother was married, had no other children, was not receiving public assistance and had returned to school for at least two years.

Other measures of a child's well-being tell a similar story. Welfare recipients were significantly more likely to rate their child as being uncooperative, rude and disobedient; mothers who had had at least one more child were also more likely to say this about their child. In addition, welfare recipients were somewhat more likely to classify their child as shy, bored or unhappy, as were women who had had another child. It could be that some mothers rate their children more negatively than their child's behavior warrants; however, the degree of similarity between these ratings and the children's later evaluations of their own behavior make this explanation unlikely.

Relationships between maternal characteristics and children's behavior are even clearer after the children have reached adolescence. For example, a teenager whose mother was on welfare at some point during the five years preceding the interview was 2.7 times as likely as others to have failed a grade in school; a child whose mother had never graduated from high school was 2.4 times as likely to have fallen back a grade; and one whose mother was unmarried was 2.2 times as likely to have done so (all significant at $p<0.01$). A child whose mother experienced all these disadvantages would be 11 times as likely to have failed a grade as a child whose mother had none of them.

Sixty-nine percent of the black adolescents studied here had had sexual intercourse by age 15. There were smaller differences according to various maternal characteristics, but children whose mother had received public assistance in the previous five years were 60 percent more likely to have had sexual intercourse; adverse marital, educational and fertility status raised the likelihood of sexual experience

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*The Baltimore children scored a mean of 62 on the Caldwell scale, with a standard deviation of 28.

20–40 percent, but these levels were not statistically significant.

Behavior problems (a note from school, expulsion from school, runaway, theft or police trouble) were weakly associated with maternal characteristics. According to parental reports, teenagers whose mother had received public assistance in the previous five years were twice as likely to have ever run away or to have ever stolen and 60 percent more likely to have ever been stopped or questioned by the police. Likewise, an unmarried woman was 2.4 times as likely to say that her teenager had been stopped by the police and almost twice as likely to have received a note from school about her child. Results for a series of other problems (whether the child sometimes cheats, misbehaves at home, misbehaves at school or has friends who get in trouble) were found to parallel the first set of items: Unmarried women were 60 percent more likely to report that their child cheats, and women who were receiving welfare were almost twice as likely to say that their child's friends misbehave. However, most of the other associations were small and nonsignificant.

The children's own reports were very similar to those described above. Specifically, a child whose mother was unmarried or had recently been receiving public assistance was more likely to say that he or she had seriously hurt someone, lied about something important, stolen something of value, been stopped by the police or damaged school property. In addition, a teenager whose mother received welfare was 50 percent more likely to have smoked marijuana, and one whose mother was unmarried was twice as likely to have done so.

However, what are the precise connections between the unfolding life courses of the mothers and children? We have postulated four models of the life course: Model A indicates that the mother's status does not strongly influence the child's life course; Model B states that the mother's influence operates only when the child is quite young; Model C indicates that the mother's characteristics have little influence early on but increase as the child grows older; and Model D posits that both early and later experiences of mothers influence their children.

As far as economic well-being goes, our data support Model D: The mother's economic status has pervasive effects on the child's academic performance. For example, our analysis demonstrates that if the mother received public assistance as a child and in the first years of her child's life, the child's average score on the Preschool Inventory scale is reduced by an average of 21 points. And because this school readiness measure is strongly associated with subsequent school performance, past welfare receipt translates into a 50 percent increase in the child's likelihood of having failed a grade by 1984. Furthermore, if the mother was receiving welfare during the five years preceding the 17-year follow-up, her child's likelihood of school failure is tripled, implying that recent welfare experience is considerably more important for current school performance than is preschool experience.

However, the early maternal influence model (Model B) is best at describing the association between the mother's welfare experience and her child's behavior problems: Welfare receipt in the first five years after the child's birth has a negative impact on preschool behavior and temperament, but the mother's welfare status in subsequent years has no additional independent effect. Receipt of public assistance during the preschool years seems to affect all aspects of a young child's behavior, and this early effect can still be seen in adolescence.

The mother's marital status appears to have only weak effects on the preschool child, but marital status is clearly associated with poor academic performance and behavior problems among adolescents, a pattern illustrative of Model C. Why would marital status be unimportant early in life but important later on? One answer might be the flexible nature of the black family in helping a teenage mother care for and rear her young child; many of the women in our sample were dependent on their parents in the years immediately following childbirth. By contrast, few women were living with their parents 16 years after the birth of their first child, and few were accepting substantial help from other relatives.

Maternal education provided another example of a Model C pattern: The child's Preschool Inventory score was not influenced by the mother's early education, but a child whose mother had completed high school by the time he or she was 16 was less likely to experience grade failure.

All of the outcomes were influenced by the number of additional children the mother had prior to the child's fifth birthday. However, net of this effect, the mother's fertility in subsequent years was not strongly associated with her child's academic preparedness or psychological or behavior problems. Thus, it appears that the timing of additional childbearing is most important; rapid childbearing in the short time following the birth of the first child reduces the amount of time and resources that can be spent on the first child. We have seen that if a woman can control her fertility, she can reap personal benefits; results for the children suggest that the first child may also benefit from delays in subsequent childbearing.

Conclusions

The young mothers who participated in our study are far better off today than they were a decade ago; many more have advanced their schooling, found employment, become independent of welfare, established their own households and regulated their fertility. However, the assumption that premature parenthood creates lasting social and economic disadvantages is strongly corroborated by the results of our long-term follow-up. While many teenage mothers manage to break out of the seemingly inevitable cycle of poverty, the majority did not fare as well as they probably would have had they been able to postpone parenthood. These findings lend some credibility to the belief that the life course remains relatively fluid, but they also suggest that the degree of flexibility that teenage parents have in manipulating their circumstances in later life is definitely limited.

Yet we found little evidence that most mothers neglected their children. On the contrary, the energy put into providing adequate care while they were in school or at work, the pride they took in their teenagers' accomplishments and the strong feelings of love that they felt were evident from the interviews that we conducted. Most of the mothers felt that they had done a good job of raising their children in less than ideal circumstances. At the same time, the mothers are very realistic about the consequences of early parenthood for themselves and, potentially, for their children. The mothers clearly know that avoiding pregnancy, completing school and postponing marriage are most likely to ensure later success for their children.

One of our most important findings is that although only about one-quarter of the women seem to have remained poor and dependent on welfare, these are the women most likely to experience problems in later life. Identifying this high-risk group is a particularly important task, for a number of reasons. First, programs can be tailored to the specific needs of this population; in addition, more intensive and comprehensive programs can be designed for these women. Our study shows that while some of their peers may need help in only one or two areas, the young women at highest risk have relatively broader needs for aid. Since these women are often difficult to serve because of their disorganized lives, more systematic recruitment efforts may be necessary to avoid "losing" those who are most in need of assistance. Finally, because it is often those most in need who drop out of programs as a result of low motivation, poor skills and limited social support, special strategies must be developed to enhance the motivation of these young mothers. They could perhaps combine short-range incentives, such as cash stipends or day-care services, and long-range incentives, such as educational scholarships or job placements.

We have seen that adolescents who were educationally ambitious and at grade level when they became pregnant had a far better chance of avoiding economic dependency and excess future fertility than had those with limited goals and less educational success. Of course, some of the weaker students would probably have experienced problems later in life regardless of when they became parents, but early childbearing did seem to push many marginal students out of school. Programs designed to improve academic skills clearly enhanced the young women's probability of later success: Attendance at Poe School made a direct and large contribution to economic independence and small family size. Although that program did attract students with greater academic talents, it also was successful in aiding academically marginal students. Thus, it may be wiser for an adolescent mother with little proven academic ability to enroll in a special program for teenage parents (if one is available) than to return to a normal high school program.

While preventive programs have been hailed as the best hope for altering the transmission of poverty and the life courses of individual teenagers, their effectiveness seems limited. One reason for this failure may be that most programs take an individual rather than societal approach. Recent comparative research has shown that rates of teenage pregnancy and childbearing are substantially higher in the United States than in other industrialized nations.[20] What are the countries of Western Europe doing that we are not? They have focused not on teenage sexuality as a problem, but on teenage pregnancy. They provide excellent and comprehensive sex education and contraceptive services and do so enthusiastically. The result is more responsible sexual behavior among European teenagers. Americans, on the other hand, have not faced up to their obligation to educate young people in this way. Recently, a special panel of the National Academy of Sciences (NAS) recommended lowering barriers to contraceptive use by increasing access to clinics, promoting contraceptive use through the mass media and encouraging young men to use condoms.[21]

Clearly, however, lowering barriers to contraceptive use will not accomplish much if young people do not believe that deferring parenthood is beneficial. It is for this reason that the NAS also called for efforts to enhance the life options of disadvantaged youth. For example, it is often said that teenagers who become parents do so because they have little hope for the future, but it is at least as likely that adolescent childbearing results from despair over the present. Half of the children of teenage mothers in our study were not at grade level in 1984; judging from our research and that of others, school failure appears to be an important risk factor in early childbearing.[22] The results of the Baltimore study clearly indicate that mothers who were behind in school at the time of their pregnancy had dismal prospects of later recovery. Thus, programs that provide remedial training for children at risk of school failure could be a most effective way of combating early childbearing as well as enhancing the adjustment of teenagers who have already had children.

Our results indicate that it is never too late for effective intervention. Nonetheless, the findings do show that a child's behavior and academic performance are negatively affected by the mother's being on welfare, being unmarried, not having finished high school and having had an additional birth early. The surprising diversity of the later lives of adolescent mothers has clear implications for these women's children, in that their chances of "making it" are affected not only by the circumstances of their birth and their own abilities, but also by the extent to which their mothers can overcome the disadvantage of early parenthood.

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The Impact of Family Planning Program Activity on Fertility

By John E. Anderson and Lisa G. Cope

Introduction

In this article we consider whether publicly funded family planning programs in the United States have been effective in reducing fertility rates. Our study seeks to determine through multivariate analysis whether higher program enrollment rates in local areas are associated with lower fertility rates in 1980, when other factors are controlled for statistically. Although this type of analysis has a number of advantages, the results must be interpreted in the context of other evidence involv~~ing diff~~erent types of measurement.

Despite some fluctuations, U.S. fertility rates declined during the 1970s, both among teenagers and among all women of reproductive age.[1] During the same period, the number of women served by family planning programs more than tripled.[2] Our study suggests that for some groups, program enrollment did have a significant effect on local area fertility levels.

Several previous studies have used multivariate areal analysis to assess the impact of program enrollment on fertility in the United States.[3] Both Phillips Cutright and Frederick S. Jaffe, looking at fertility in 1970, and Jacqueline D. Forrest and her colleagues, examining fertility in 1970 and 1975, found that enrollment in a family planning program had a significant negative association with fertility. Our study extends this past research by examining fertility in 1980, using vital statistics and data from the 1980 U.S. census. Census information, which is collected only every 10 years, has features unavailable from other sources of data. For example, fertility measures can be calculated by level of income for small areas throughout the United States. Although it would have been preferable to try to assess the effect of enrollment on pregnancy rates, this was not possible because of the unavailability of abortion data at the small-area level by place of residence.

Background

In general, teenage fertility declined during the 1970s. The birthrate among whites aged 15–19 fell from 57.4 per 1,000 in 1970 to 44.7 in 1980; among black teenagers, it fell from 147.7 to 100.0 during the same period.[4] Among unmarried white teenagers, birthrates increased during the 1970s. Among unmarried black adolescents, fertility fluctuated at a high level throughout the decade, reaching rates almost six times as high as the corresponding rates for white adolescents.[5] During the 1970s, an increasing percentage of teenagers became sexually active prior to marriage; at the same time, higher proportions of sexually active teenagers used contraceptives.[6] Over the decade, an increasing proportion of unmarried women who became pregnant and resolved their pregnancies while still unmarried obtained abortions: In 1970, 26 percent of such pregnancies ended in abortion, compared with 41 percent in 1979.[7]

The birthrates of both black and white women of reproductive age (15–44) declined between 1970 and 1976, then increased through 1980, with some fluctuation. The differential between black and white fertility rates did not decline over this period.[8] Data on contraceptive use from the 1976 and 1982 National Surveys of Family Growth (NSFG, Cycles I and II) show that women of reproductive age in all age, racial and poverty-status groups increased their dependence on sterilization as a contraceptive method and decreased their use of the pill. As a result, the proportion of women using the three most effective methods of contraception (the pill, IUD and sterilization) did not vary substantially, ranging between 43 and 50 percent. In 1982, as in 1976, black women were less likely than white women to practice contraception. Although there was virtually no difference by poverty status in the proportion of black women using contraceptives, low-income white women were slightly less likely to practice contraception than were those of higher income (64 percent vs. 70 percent).[9] Abortion rates for women aged 15–44 increased steadily from a rate of 16.3 per 1,000 in 1973 to 29.3 per 1,000 in 1980. Throughout that period, the proportion of all abortions that occurred among women aged 15–19 remained at about 30 percent.[10]

Since the enactment in 1970 of Title X of the Public Health Service Act, which authorized federal funding of a national family planning program administered through the U.S. Department of Health and Human Services, there have been large increases in both the number of family planning clinics in the United States and the number of women who obtain services from those clinics. Federally funded family planning agencies are required to offer services to all persons, regardless of income, although priority is given to low-income women and teenagers. The number of family planning provider agencies, including clinics in health departments, hospitals, Planned Parenthood affiliates and other agencies, grew from an estimated 1,400 in 1968 to 2,626 in 1978. Over the same period, enrollment increased from 863,000 women to almost 4.5 million.[11]

In 1970, the majority of clinic patients were black, were in their 20s and had had at least one child; only about one-fifth were teenagers. By 1978, most were white and childless, and about one-third were teenagers. Estimates of the poverty status of

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users show that the proportion of users who were low-income (under 150 percent of the federal poverty level) increased from 72 percent of all women served in 1973 to 81 percent by the end of the decade.[12]

Table 1 shows the percentage of women at risk of pregnancy who visited a family planning clinic within the 12 months prior to the 1982 NSFG, according to their poverty status, race and age. Low-income women were more likely to enroll in clinics than were higher income women, who tend to rely more on private physicians. Among white teenagers, however, poverty status made little difference in their level of clinic enrollment. Black women were more likely to go to family planning clinics than were white women, and adolescents were more likely to use clinics than were older women.

Several previous studies have used areal analysis to examine the relationship between family planning programs and fertility. In a national study based on 1970 census data, Cutright and Jaffe found a significant negative association between program enrollment and fertility for black and white women with family incomes that placed them below 200 percent of the federal poverty standard. For women above 200 percent of poverty, a significant negative association of enrollment with fertility was found only for black teenagers.[13] Forrest, Hermalin and Henshaw concluded that in the mid-1970s, there was a significant negative relationship between enrollment and the fertility of white teenagers and, in two of their models for black teenagers, when areal differences in the level of sexual activity were controlled for indirectly.[14]

Methods and Data

The use of areal analysis to examine the relationship between family planning programs and fertility rates has several advantages over individual-level analysis. With multivariate areal analysis, one can determine whether the family planning program is associated with lower fertility, independent of other factors. With individual-level analysis, it cannot be determined whether the level of fertility is lower in a given community because of the existence of a family planning program or because of some other factor or factors. Areal analysis is appropriate when the goal is to assess the overall impact of a program in a community, as in this study, rather than its effect on individuals; such analysis therefore yields important information for policy decisions. The "ecological fallacy," involving relationships found on an aggregate level that may not exist on an individual level,[15] is not a problem here, because it is the aggregate effect of the program that is of interest.

There is one important potential source of error, however, in the use of areal analysis in this context. There are variations between geographic areas in the proportions of women who are at risk of pregnancy because of variations in the proportions who are fecund or sexually active as well as variations in other factors. It is possible that where the percentage of women at risk of pregnancy is high, the proportion utilizing family planning clinics will also be high. At the same time, in areas where there is a high proportion of women at risk, there is likely to be a relatively high fertility rate, thus making it appear that the family planning clinics have little effect or even serve to increase fertility. Some of the variables included in the study may be associated with the proportion of women at risk, but there is no direct measure of risk that can be used as a control. Teenagers are a special case of this type of problem: The percentage sexually active is likely to be associated both with the proportion enrolled in clinics and with fertility. Areal relationships constitute only part of the evidence regarding program impact. However, the results of areal analysis can add to the understanding of the role of public programs gained from surveys, vital statistics and program records.

The independent variables used in this study are defined in Appendix Table 1 (see page 157). Socioeconomic and demographic factors, private health care and availability of abortion services are each hypothesized to influence fertility. Since many factors besides program enrollment affect fertility, it is necessary to control for them to assess the independent effect of enrollment. Our measure of enrollment is the number of women enrolled in family planning clinics in 1978 per 10,000 women aged 15–19 and aged 15–44. Socioeconomic factors, i.e., unemployment, poverty, education, expenditures for education and Aid to Families with Dependent Children (AFDC—the principal cash assistance program to women of reproductive age), are hypothesized to affect fertility independently of their effects on program activity and enrollment. Unemployment rates are considered to be an indicator of the economic vitality of an area as well as a measure of the opportunities available to women, and should be directly related to fertility rates. Areas with a high proportion of families with incomes below 150 percent of the federal poverty level may be expected to have high fertility rates, because poor women, when looked at individually, tend to have higher fertility than do women who have higher incomes. The level of education should be inversely related to fertility rates, since women with more education have fewer children than do less educated women. AFDC support might provide an incentive that affects fertility.

Demographic factors included in the analysis are 1970 fertility rates, the proportion of the population aged five and older who resided in a different county in 1975 than in 1980, the proportion of the population that is black, the proportion of women aged 15–44 who are in their 20s, metropolitan status and region. The proportion of the

Table 1. Percentage of women at risk of pregnancy* who visited a family planning clinic in the previous 12 months, by race and age, according to poverty status, 1982

Race and age	Poverty status		
	Total	<150%	≥150%
Black			
15–19	57.1	60.5	51.0
15–44	33.4	40.9	26.4
White			
15–19	31.9	30.0	33.2
15–44	16.1	25.8	13.1

*A woman is considered to be at risk if she has ever had sexual intercourse and, as of three years before the survey, neither she nor her husband was sterile.

Source: NSFG, Cycle III, 1982.

Table 2. Means and standard deviations (S.D.) of selected fertility measures, by race and poverty status, according to age, 1980

Race and poverty status	Fertility measure	
	ASFR* 15–19	CPW† 15–44
White		
Total		
Mean	532	713‡
S.D.	193	148
<150%		
Mean	u	968
S.D.	u	257
≥150%		
Mean	u	643
S.D.	u	135
Black		
Total		
Mean	1,031§	860
S.D.	265	187
<150%		
Mean	u	1,063
S.D.	u	223
≥150%		
Mean	u	653
S.D.	u	165

*Age-specific fertility rate: births per 10,000 women aged 15–19.

†Children under age one per 10,000 women aged 15–44.

‡Includes all races other than black.

§Includes all races other than white.

Note: In this table and in Table 4, u=unavailable.

Table 3. Standardized regression coefficients showing the association of selected factors with family planning clinic enrollment among women aged 15–44 and among those aged 15–19, for all Statistical Analysis Units (SAUs) and for those with at least one family planning site, 1978

Factor	Women aged 15–44		Women aged 15–19	
	All SAUs	SAUs with ≥1 site	All SAUs	SAUs with ≥1 site
Education	–0.060	–0.064	–0.048	–0.051
% unemployed	–0.047*	–0.077***	–0.049*	–0.073**
% in poverty	0.184***	0.256***	0.093**	0.141**
% urban	0.102***	0.122***	0.047	0.043
Metro status	0.051*	0.040	0.102***	0.098**
Metro size	–0.049*	–0.047	–0.074***	–0.072**
North Central	–0.021	–0.004	–0.034	–0.015
South	–0.033	–0.013	–0.179***	–0.181**
West	0.065*	0.092**	0.036	0.053
Migration	–0.084**	–0.068	–0.026	–0.003
% black	0.002	–0.021	0.062*	0.044
% renter	0.098**	0.075	0.111***	0.100**
% voting, 1980	–0.043	–0.031	0.006	0.022
% fundamentalist/Mormon	0.004	–0.003	–0.001	0.002
Fertility, 1970	–0.008	0.004	0.085**	0.088**
Population change, 1970–1980	0.040	0.009	0.015	–0.010
% of women aged 15–44 who are 20–29	0.014	–0.012	na	na
% of women aged 15–19 who are 15–17	na	na	0.000	0.021
Program sites	0.457***	0.349***	0.408***	0.296***
Ob-gyn rate	0.086***	0.065**	0.130***	0.109***
GP rate	–0.090***	–0.064**	–0.074***	–0.046
R^2	0.36***	0.25***	0.25***	0.14***

*p<0.10. **p<0.05. ***p<0.01. Note: na = not applicable.

population that is black is included as a control because many independent variables, such as unemployment rates, are not race-specific, yet do vary for different races. It is important to control for past fertility because family planning clinics tend to be located in areas that already have high fertility. Including past fertility levels may also control for other factors not included in the model that are related to current fertility levels (such as fecundity and levels of sexual activity). To control for variations in age structure, the proportion of women of reproductive age who are in their 20s is included in models estimating the fertility of women aged 15–44, and the proportion of women aged 15–19 who are 15–17 is included in the analysis of teenagers.

The availability of private health care is measured by both the number of obstetrician-gynecologists and the number of general practitioners per 10,000 women. The availability of abortion services may be related to fertility rates. Abortion rates could not be measured directly, because accurate counts of abortions are known by place of occurrence rather than by woman's residence, and many women have abortions outside the county in which they live. The regressions include a number of other variables that may influence local fertility rates. These include measures of the percentage of housing that is renter-occupied, the percentage of people voting in recent elections and the percentage that are Mormons or fundamentalist Protestants.

In this part of the analysis, the dependent variables are fertility rates in 1980. For 15–19-year-olds, the dependent variable is the age-specific fertility rate, by race, while for women aged 15–44, it is the number of children under the age of one per 10,000 women, by race and poverty status.

Because more than 80 percent of women who obtain family planning services from clinics have family incomes below 150 percent of the poverty standard, the effect of program enrollment on fertility should be strongest for this group of women.[16] Therefore, separate regressions were run for women aged 15–44 according to income level—at, above or below 150 percent of the poverty standard—as well as for women of all poverty statuses, with the expectation that the strongest effects of enrollment on fertility would be for low-income women.

The data used in this analysis come from several sources, as indicated in Appendix Table 1. All of the information collected was on a county level. To avoid problems resulting from small populations, small counties were grouped with other contiguous counties to form Statistical Analysis Units (SAUs).* Counties with large populations formed their own SAUs. The values for the fertility variables by poverty status in 1980 were obtained from special tabulations of the 1980 U.S. census. Other fertility data come from vital statistics. Information on program enrollment, program sites, the availability of private health care and abor-

Table 4. Fertility means, by race and age, according to level of family planning program enrollment and poverty status

Race and age	Poverty status and program enrollment								
	Total			<150 %			≥150 %		
	Low	Med.	High	Low	Med.	High	Low	Med.	High
White									
ASFR 15–19*	504	545	538	u	u	u	u	u	u
CPW 15–44†,‡	752	687	693	1,006	953	934	690	617	616
Black									
ASFR 15–19*,§	960	1,073	1,018	u	u	u	u	u	u
CPW 15–44†	829	867	851	1,082	1,074	1,039	648	658	639

*Births per 10,000 women aged 15–19. †Children under the age of one per 10,000 women aged 15–44. ‡Includes all races other than black. §Includes all races other than white.

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*The definition of SAUs used in this analysis is the same as that used by Forrest in her study of teenage fertility. (See: J. D. Forrest, *Exploration of the Effects of Organized Family Planning Programs in the United States on Adolescent Fertility*, AGI, New York, 1980.) In that study, the size of the SAUs was determined by considering the number of women of a particular age and racial subgroup that had to be present in order to minimize random year-to-year fluctuations in the birthrates of an SAU. In our analysis, we use two of their sets of SAUs: SAU1 was used for regressions for white women and all women. This set includes 1,636 SAUs, more than half of which consist of one county. About 96 percent of all counties in the United States—2,961—were included. SAU3 was used for regressions for black women. This set includes 446 SAUs, almost half of which consist of one county. About one-third of all U.S. counties—981—were included in SAU3.

tions comes from the data files of The Alan Guttmacher Institute (AGI). Socioeconomic and demographic variables, such as unemployment rates, come from the 1980 Census Summary Tape files.

Table 2 (page 153) shows the means and standard deviations of the dependent variables—the 1980 fertility rates—by race, poverty status and age. These means are unweighted averages of the SAU values. In each income category, fertility is slightly higher for black women than for white women. For every 10,000 women aged 15–44, the ratio of children under age one is about 21 percent higher for black women than it is for white and other women. For teenagers, the difference in the fertility rate by race is even larger. Fertility measures for low-income women of reproductive age are higher than those for women of higher income, regardless of race.

Determinants of Program Enrollment

In another analysis, we made the dependent variable program enrollment in 1978 per 10,000 women. Both the enrollment of adolescent women and that of all women of reproductive age are examined. Two models are estimated for each group of women. One includes all SAUs, whereas the other excludes SAUs with no program sites. (The SAU1 data set described in the footnote below is used in this analysis.) Since no women can be enrolled in clinics in areas where there are no program sites, the association of program activity with enrollment is exaggerated when all SAUs are included.

Table 3 shows standardized regression coefficients indicating the associations of various factors with clinic enrollment. When other factors are controlled for, the level of family planning program activity in an area, as measured by the number of clinic sites, is the most important determinant of the level of program enrollment. Unstandardized regression coefficients not included in the table show that for every clinic site added in an SAU, an additional 222 women aged 15–44, including 73 teenage patients, can be expected to enroll.

The proportion of low-income women in an area has a significant positive relationship with the program enrollment rates of both teenagers and all women of reproductive age. This relationship is expected, since it has been shown that on an individual level, low-income women have higher enrollment rates than do women with higher incomes (see Table 1). Somewhat surprisingly, though, unemployment rates have a significant negative relationship to the enrollment rates of both groups of women. Residency in rental housing is also positively associated with clinic enrollment. The number of obstetrician-gynecologists per 10,000 women has a significant positive relationship, and the number of general practitioners a significant negative relationship, with program enrollment rates. These relationships may reflect the concentration of specialist physicians in metropolitan areas and of general practitioners in rural areas. Metropolitan and urban areas have significantly higher enrollment than do nonmetropolitan and rural areas.

Enrollment of teenagers is significantly lower in the South than in other regions. Fertility in 1970 has a significant positive association with the enrollment rates of teenagers, but has no significant relationship with the enrollment rates of all women aged 15–44. The proportion of the population that is black does not have a consistent association with enrollment, even though on an individual level, black women have been shown to have higher enrollment rates than do white women (see Table 1).

In sum, the level of family planning in an area is more strongly associated with the number of clinic sites per capita than are any of the other variables examined. Together, all these factors explain 36 percent of the variance in enrollment levels for women aged 15–44 and 25 percent of the variance in enrollment of teenagers.

Determinants of Fertility

In this section, we first look at the zero-order relationship between program enrollment and fertility. Then we examine the independent effects of enrollment on the fertility of different groups of women, using multivariate areal analysis. In addition, we look at the independent effects of other factors on fertility.

Table 5. Unstandardized regression coefficients showing the association between family planning clinic enrollment and the age-specific fertility rate of women aged 15–19, three different regression models, 1980

Model	Total (N= 1,576)	White (N= 1,576)	Nonwhite (N= 381)
Cross-sectional	−0.0057**	−0.0069**	0.0017
Lagged-dependent variable	−0.0072***	−0.0085***	−0.0038
Change	−0.0071***	−0.0083***	−0.0123

*p<0.10 **p<0.05 ***p<0.01

Table 6. Standardized regression coefficients showing the association of selected factors with the 1980 age-specific fertility rate of all women aged 15–19, lagged-dependent-variable model

Factor	Coefficient
Education	−0.252***
Education expenditures	0.027
% unemployed	−0.046***
% in poverty	0.223***
AFDC index	−0.011
Maximum AFDC payment	−0.101***
% urban	0.154***
Metro status	−0.071***
Metro size	−0.062***
North Central	0.153***
South	0.094***
West	0.213***
Migration	0.023
% black	−0.052***
% renter	0.022
% voting, 1980	−0.022
% fundamentalist/Mormon	0.077***
ASFR, 15–19, 1970	0.379***
Population change, 1970–1980	−0.115***
% of women aged 15–19 who are 15–17	0.210***
Enrollment	−0.042***
Abortion availability	−0.031*
Ob-gyn rate	−0.052***
GP rate	−0.021
R^2	0.73
Number of areas	1,584

*p<0.10. **p<0.05. ***p<0.01.

Table 4 shows the fertility means for areas with different levels of enrollment, by poverty status, race and age. The zero-order correlations between fertility and enrollment vary for different groups of women. Among white teenagers, enrollment has a strong positive relationship with fertility. A positive relationship may reflect the tendency for program sites to be located in areas with high fertility. Thus, it is necessary to control for other factors, including earlier fertility levels, to assess the net impact of enrollment on fertility. For all white women and all low-income white women of reproductive age, however, there is a strong negative relationship between enrollment and fertility, when other factors are not controlled for. Among nonwhite teenagers and black women aged 15–44, there tends to be a nonlinear relationship between enrollment and fertility, with the highest fertility rates found in areas that have medium enrollment rates. Among low-income black women, fertility declines with enrollment.

- *Teenagers.* Four types of multivariate analyses were run for teenagers: the cross-sectional type; the lagged-dependent-variable type; the change model; and the unobserved-variable type. The cross-sectional model contains all the predictor variables with the exception of prior fertility. The lagged-dependent-variable model adds to this the 1970 fertility rate, in order to control

Table 7. Unstandardized regression coefficients showing the association of family planning clinic enrollment with the number of children under the age of one per 10,000 women aged 15–44, by poverty status, according to race, 1980

Poverty status	Total (N= 1,583)	White (N= 1,583)	Black (N= 362)
Total	**–0.011*** **	**–0.011*** **	**–0.018**
<150%	–0.021***	–0.019**	–0.012
≥150%	–0.008**	–0.007	–0.016

for the effect of earlier fertility levels on program effort. The change model has as a dependent variable the difference between the 1970 and 1980 age-specific fertility rates and, for the enrollment variable, the difference between the 1970 and 1978 enrollment rates. The unobserved-variable model introduces levels of sexual activity into the analysis.

Table 5 (page 155) summarizes, by race, the associations of family planning clinic enrollment with fertility in the first three models. For women of all races and for whites, enrollment is negatively associated with fertility in all models, and the association is significant at the 0.05 level or better. The regression models for nonwhites show negative associations for the lagged-dependent-variable and change models. For the change model, the relationship of enrollment among blacks is greater than that among women of all races and among whites. However, the relationship does not achieve statistical significance, because the number of cases on which the nonwhite regressions are based is much smaller than that of the other groups—in this instance, 381 compared with 1,576 SAUs. (The number of SAUs used in the models is reduced because of missing values on some of the predictors included.) As can be seen in the table, for every 1,000 additional patients of all races enrolled, a decrease among them of 6–7 births can be expected.

Table 8. Standardized regression coefficients showing the association of selected factors with the number of children under the age of one per 10,000 women aged 15–44 of all races and poverty statuses, lagged-dependent-variable model

Factor	Coefficient
Education	–0.157***
Education expenditures	0.037
% unemployed	–0.228***
% in poverty	0.156***
AFDC index	0.062*
Maximum AFDC payment	–0.072**
% urban	0.085***
Metro status	–0.052*
Metro size	–0.007
North Central	0.223**
South	0.071
West	0.420***
Migration	–0.086***
% black	–0.001
% renter	–0.221***
% voting, 1980	0.172***
% fundamentalist/Mormon	0.062**
Fertility, 1970	0.409***
Population change, 1970–1980	–0.056*
% of women aged 15–44 who are 20–29	0.043*
Enrollment rate	–0.056***
Abortion availability	–0.032
Ob-gyn rate	–0.119***
GP rate	0.090**
R^2	0.51***
Number of areas	1,583

*p<0.10. **p<0.05. ***p<0.01.

The lagged-dependent-variable model for all races (see Table 6, page 155), shows various factors that may predict fertility levels on a local level. (Together, these factors explain 73 percent of the variance in fertility.) A large number of the terms have significant coefficients. Standardized regression coefficients are shown so that the strength of the associations can be compared between predictors. Variables that have strong negative associations include education, rate of population change and metropolitan status. Strong positive associations are indicated for residence in regions outside the Northeast, particularly the North Central and Western regions, and the percentage of the population that belongs to fundamentalist Protestant or Mormon churches. Some surprising associations include negative relationships with the percentage of the population that is black and with the proportion of the labor force that is unemployed. Higher maximum AFDC payments are associated with lower fertility among teenagers, and abortion availability has a negative relationship that is marginally significant at the 0.10 level.

As noted previously, differences between areas in levels of sexual activity can be assumed to be an important factor influencing both fertility and clinic enrollment, especially among teenagers. Although there are no data available with which to measure such differences between local areas, Forrest and her colleagues have suggested an alternative approach that introduces sexual activity into the model as an unobserved variable.[17] Using data from the current study in that model yields the following unstandardized coefficients showing the relationship between teenagers' clinic enrollment in 1978 and their birthrates in 1980:

Race	Coefficient
Total	**–0.141**
White	–0.065
Black	–0.038

Thus, for every 1,000 teenagers enrolled, about 141 births could be expected to be averted. These relationships are much larger than those found with the other multivariate models, a difference that was also found by Forrest and her colleagues.

- *Women aged 15–44.* For women aged 15–44, a model including a lagged fertility variable was run by poverty level and race. The results are similar to those for teenage women: There are significant negative associations of enrollment with fertility for all races and for white women, but not for black women. Again, this difference in significance is related to the much smaller number of SAUs in the analysis for blacks—362 vs. 1,583. The actual size of the negative relationship between enrollment and fertility is higher for blacks than for whites among women in all poverty groups and among those above 150 percent of poverty. In all the models shown in Table 7, higher enrollment rates are associated with lower fertility. Among all races and among white women, the strongest relationships are found for those with family incomes that place them below 150 percent of the federal poverty standard.

Table 8 shows that for all races and all poverty statuses, coefficients for the lagged-dependent-variable model are mostly in the same direction as those found in the teenage model. In this case, more extensive AFDC coverage is related to higher fertility, but higher maximum payments are associated with lower fertility. The association of abortion availability with fertility is not statistically significant.

Conclusions

These multivariate analyses support the conclusion that the family planning program has had an impact on aggregate fertility levels, as was intended. However, areal analysis itself should never be taken as the only evidence of program effect. Other data, taken from program records and from surveys of individual women, also indicate that the impact of the program has been felt by large numbers of women who have visited clinics and obtained contraceptive services. The areal analysis presented in this article, made possible by the existence of data from the decennial census, suggests that this impact has been translated into measurably lower fertility rates among women, including poor women and teenagers, across the entire country.

We found higher enrollment rates associated with lower fertility in every model in which prior fertility was controlled for. Coefficients for all races and whites were highly significant statistically. For blacks, we had to rely on a much smaller number of areal units, and statistical significance was not found for three of the four models. Because the dispersion of the black population among counties is limited, the statistical power in the areal analysis is much less for this segment of the population than for whites and for the total population. The strongest effect by far for teenagers was found using the unobserved-variable model, which attempts to control for differences between areas in levels of sexual activity.

Finally, we found that the strongest predictor of program enrollment in 1978 was the level of program activity, as measured by the number of program sites. Areas with more sites per capita had higher enrollment rates. Thus, it appears that further reductions in unplanned fertility, and by inference, unplanned pregnancy, would be possible if more family planning clinics were established.

Appendix Table 1. Independent variables associated with fertility: names, definitions and sources

Name of variable	Definition	Source
Education	Proportion of women aged 20–29 with at least 12 years of education	AGI
Education expenditures	Local government education expenditures per child aged 15–17, 1977	CCDB
% unemployed	Percentage of labor force that is unemployed, 1980	STF3
% in poverty	Percentage of women below 150% of the poverty level, by age (15–19/15–44) and race, 1980	AGI
AFDC index	Index of coverage of Aid to Families with Dependent Children (AFDC)	Singh
Maximum AFDC payment	Maximum monthly AFDC payment to a family of two persons	Singh
% urban	Percentage of total population in urban areas, 1980	
Metro status	Dummy variable for whether SAU is a metropolitan area	AGI
Metro size	Population of the metropolitan area, in 000s, 1980	SA
Region	Dummy variables for region: Northeast, North Central, South, West	AGI
Migration	Proportion of population aged ≥5 residing in a different county in 1980 than in 1975	STF3
% black	Percentage of total population that is black, 1980	STF3
% white	Percentage of total population that is white, 1980	STF3
% renter	Percentage of housing units that are renter-occupied, 1980	CCDB
% voting, 1980	Percentage of voting-age population who voted, 1980	EDS
% fundamentalist/ Mormon	Percentage of population belonging to fundamentalist or Mormon churches, 1980	GRC
Fertility, 1970	Number of births per 10,000 women aged 15–44, by race, 1970	AGI
ASFR, 15–19,1970	Number of births per 10,000 women aged 15–19 by race, 1970	AGI
Population change, 1970–1980	Percentage change in population, 1970–1980	AGI
% of women aged 15–44 who are 20–29	Number of women aged 20–29 per 100 women aged 15–44	STF3
% of women aged 15–19 who are 15–17	Number of women aged 15–17 per 100 women aged 15–19	AGI
Enrollment rate	Number of women enrolled in family planning programs, 1978, per 1,000 women aged 15–19, by race (white/nonwhite) and per 1,000 women aged 15–44, 1980	AGI
Program sites	Number of family planning clinics, 1978, per 10,000 women aged 15–19 and aged 15–44, 1980	AGI
Abortion availability	Number of abortions occurring in county or SAU in 1978 per 10,000 women aged 15–44, 1980	AGI
Ob-gyn rate	Number of obstetrician-gynecologists, 1975, per 10,000 women aged 15–44, 1980	AGI
GP rate	Number of general practitioners, 1975, per 10,000 women aged 15–44, 1980	AGI

Sources: **AGI:** Alan Guttmacher Institute files; **CCDB**: Census Bureau, *County and City Data Book, 1983* (tape file); **STF3:** 1980 Census Summary Tape File 3; **Singh**: S. Singh, "Adolescent Pregnancy in the United States: An Interstate Analysis," *Family Planning Perspectives*, **18**:210, 1986; **SA:** U.S. Department of Commerce, *Statistical Abstract of the United States, 1981*, U.S. Government Printing Office, Washington, D.C.,1981. **EDS**: Election Data Services, Washington, D.C; **GRC:** Glenmary Research Center, unpublished data from 1980 survey of churches, Atlanta, 1982.

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Abortion Training in U.S. Obstetrics And Gynecology Residency Programs

By Philip D. Darney, Uta Landy, Sara MacPherson and Richard L. Sweet

Summary

The majority (72 percent) of U.S. residency programs in obstetrics and gynecology include first-trimester abortion techniques in their training. Programs affiliated with public hospitals or with private non-Catholic institutions are the most likely to provide such training, while Catholic-affiliated training programs and those at military hospitals are the least likely to do so. Approximately 23 percent of institutions include abortion training as a routine part of residency, and 50 percent offer it as optional training. The 28 percent of residency programs that offer no abortion training represents an almost fourfold increase since 1976. Although more of the large programs affiliated with public hospitals now include such training as a routine part of their residency programs, fewer of the private non-Catholic programs—where the largest proportion of residents are trained—do so. Consequently, the number of residents exposed to abortion training may have declined slightly over the past decade. Little difference exists between the proportion of programs that offer training in first-trimester techniques and the proportion that train in second-trimester techniques.

Nine percent of programs report that all residents participate in first-trimester abortion training, and another 56 percent report that at least half of their residents do so. The participation rate is linked to the expectations of the program: Approximately 88 percent of programs that routinely incorporate abortion techniques in their training report that from one-half to all of their residents participate, compared with about 55 percent of programs that offer the training as an option.

Approximately 82 percent of programs teach abortion techniques up to at least 20 weeks' gestation. However, in only 10 percent of programs do residents collectively perform more than 10 abortions per week.

Introduction

After the legalization of abortion in 1973, the number of procedures performed annually in the United States increased rapidly, subsequently leveling off at about 1.6 million.[1] The morbidity and mortality experiences of women undergoing induced abortions, most of which are performed by obstetrician-gynecologists,[2] suggest that these surgical procedures are safe and represent little risk to women's health.[3]

What role have obstetrics and gynecology residency programs played in providing future practitioners with adequate training in abortion? A survey carried out shortly after the legalization of abortion found that "many university departments have not fully assimilated the elective abortion as an integral part of the service and educational responsibility of obstetrics and gynecology. The pressing demand for abortion services will require many obstetricians and gynecologists to be prepared."[4] A second survey of residency training programs in obstetrics and gynecology, conducted five years later, noted little improvement in the situation: Between 20 and 40 percent "of all residents are estimated to have had no clinical experience in performing first-trimester abortions," the study stated, concluding that "a substantial minority of teaching hospitals provided so few abortions that they could not possibly offer adequate training in this area."[5]

Approximately 10 years have passed since the last survey of residency training in elective abortion was conducted. During that time, more than 10 million American women have terminated pregnancies. Have the passage of time and the further acceptance of abortion as a needed medical service improved the proportion of residency programs that provide training in the performance of first- and second-trimester abortions? We present the results of a third survey on the status of abortion training in U.S. obstetrics and gynecology residency programs.

Methodology

In July 1985, we mailed a two-page questionnaire to the directors of all 286 residency programs listed by the Council on Resident Education in Obstetrics and Gynecology. In November 1985, a second mailing of the same questionnaire went to all directors who failed to respond to the first letter. To obtain responses comparable to those from previous surveys, we modeled the questionnaire after the one used in 1976.*

The questionnaire asked the director of the program or the individual responsible for abortion training to provide information on the proportion of residents who receive training in first- and second-trimester elective abortion, the proportion who

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*Both surveys covered all obstetrics and gynecology residency programs. However, the 1976 questionnaire went to directors at each teaching hospital, while the 1985 questionnaire went to directors of programs, many of which cover several teaching hospitals. Consequently, there were 438 possible respondents to the 1976 questionnaire and 286 possible respondents to the 1985 questionnaire. Nonetheless, the 1986 survey actually covered more residency positions than did the earlier survey—4,506 compared with 4,011.

decline to participate and the reasons for that decision, the role of attending physicians in supervision and training, the location of the training and the methods of abortion taught. In addition, respondents were asked for information on the type of hospital, the number of abortions provided, the duration of residency training in abortion, the number of residents in the program and whether residents perform abortions outside of the program. Directors could respond anonymously, if they wished, and their general opinions about abortion training for residents were solicited. Responses were tabulated by geographical region and by the affiliation of the principal teaching hospital—public, private (non-Catholic and Catholic) and military.

Table 1. Number and percentage distribution of all training programs in obstetrics and gynecology and of residency positions in those programs; number and percentage distribution of programs and residency positions responding to abortion survey; and response rate; by region and by hospital affiliation, United States, 1985

Region and affiliation	Training programs					Residency positions				
	Total		Responses		Response rate	Total		Responses		Response rate
	N	%	N	%		N	%	N	%	
Total	**286**	**100.0**	**248**	**100.0**	**86.7**	**4,506**	**100.0**	**4,072**	**100.0**	**90.4**
Region*										
New England	18	6.3	18	7.3	100.0	270	6.0	270	6.6	100.0
Middle Atlantic	67	23.4	58	23.4	86.6	989	21.9	989	24.3	100.0
South Atlantic	50	17.5	46	18.5	92.0	797	17.7	739	18.1	92.7
East North Central	56	19.6	46	18.5	82.1	815	18.1	689	16.9	84.5
West North Central	16	5.6	12	4.8	75.0	255	5.7	227	5.6	89.0
East South Central	12	4.2	7	2.8	58.3	226	5.0	115	2.8	50.9
West South Central	25	8.7	19	7.7	76.0	463	10.3	352	8.6	76.0
Mountain	10	3.5	10	4.0	100.0	154	3.4	154	3.8	100.0
Pacific	32	11.2	32	12.9	100.0	537	11.9	537	13.2	100.0
Affiliation										
Public	96	33.6	92	37.1	95.8	1,746	38.8	1,561	38.3	89.4
Private										
Non-Catholic	131	45.8	103	41.6	78.6	2,052	45.5	1,855	45.6	90.4
Catholic	45	15.7	41	16.5	91.1	504	11.2	472	11.6	93.7
Military	14	4.9	12	4.8	85.7	204	4.5	184	4.5	90.2

*__New England:__ Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; **Middle Atlantic:** New Jersey, New York and Pennsylvania; **South Atlantic**: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia and West Virginia; **East North Central:** Illinois, Indiana, Michigan, Ohio and Wisconsin; **West North Central:** Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota; **East South Central:** Alabama, Kentucky, Mississippi and Tennessee; **West South Central:** Arkansas, Louisiana, Oklahoma and Texas; **Mountain:** Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming; **Pacific:** Alaska, California, Hawaii, Oregon and Washington.

Note: Surveys that were answered anonymously were assigned to geographic regions according to the proportions of respondents within these regions. As the Middle Atlantic region had a disproportionate number of responses from large residency programs, it was allotted more residency positions than programs from the anonymous responses. Consequently, this region shows a 100 percent response rate for residency positions but only an 87 percent response rate for programs.

Table 1 compares the number and percentage distributions of all obstetrics and gynecology training programs and of residency positions in the United States with the distributions of those that responded to the survey. Overall, 87 percent of residency training programs, representing 90 percent of all residency positions, returned the questionnaire. This response rate is considerably higher than the rates achieved in the earlier studies, and accurately reflects the geographical distribution of both obstetric and gynecology training programs and residency positions in the United States.

All of the training programs in the New England, Mountain and Pacific regions returned the questionnaires. The East South Central region had the lowest response rate, returning just over half of its surveys. This region, which encompasses the states of Alabama, Kentucky, Mississippi and Tennessee, has had a decrease of 10 percent in the number of abortions performed since 1982, while the number of abortions performed nationally has risen slightly.[8] In addition, 16 percent of women from this region who obtained abortions in 1981 did so outside of their home state, compared with only six percent nationally. These figures, and the low response rate to the survey, indicate that interest in providing abortion services and training may be less in the East South Central Region than in other regions of the country, although we did not examine the data by region.

Response rates were highest from public institutions (96 percent) and lowest from private non-Catholic institutions (79 percent). However, the institutions responding from the latter category had large teaching programs that represented 90 percent of all residency positions in private non-Catholic hospitals. Training programs at Catholic and military hospitals together represent only 21 percent of all programs and 16 percent of residency positions. The response rates for these two types of programs were not markedly different from those of other institutions.

Training Opportunities

Overall, 72 percent of institutions responding to the 1985 survey reported that they include first-trimester abortion training in their residency programs. These programs train about 75 percent of all residents in obstetrics and gynecology. Table 2 (page 160) shows that 23 percent of programs incorporate abortion training as a routine part of residency (with exceptions for residents who have religious and moral objections) and 50 percent offer it as an option. Teaching programs affiliated with public hospitals are the most likely to provide their residents with the opportunity to be trained in abortion techniques (87 percent), followed closely by private non-Catholic programs (84 percent). About one-third of institutions in these two categories that provide first-trimester abortion training include it routinely in their programs; the remainder offer it as an option. Among Catholic-affiliated institutions, 27 percent provide such training, and less than one-fifth of these include it routinely. Military programs, which are restricted by federal law from performing abortions except to save the life of the mother, have the lowest proportion of respondents saying that they give residents the opportunity to learn to perform abortions: None routinely provide such training and only 17 percent offer it on an optional basis.

Training in second-trimester abortion techniques is provided only slightly less frequently than is training in first-trimester techniques. Overall, 65 percent of programs offer their residents training in second-trimester techniques, and one-third of these make it a routine part of training.

Table 2 shows that 28 percent of obstetrics and gynecology training programs in the current survey do not teach residents how to do abortions, a situation that was characteristic of only eight percent of training programs in 1976. In addition, a slightly smaller proportion of programs in 1985 than in 1976 include abortion training as a routine part of residency—23 percent and 26 percent, respectively. However, there has been a large increase in the proportion of public hospital residency programs that routinely include training in first-trimester abortion techniques—28 percent in 1985 compared with 19 percent in 1976.

The situation is much the same with regard to second-trimester abortion training. In 1976, only 16 percent of hospital teaching programs omitted such training, but by 1985, 36 percent did so. However, a larger proportion of public institutions now routinely expect their residents to complete training in second-trimester abortion—26 percent in 1985 compared with 16 percent in 1976.

Although public hospitals report an increased number of programs that routinely incorporate training for first- and second-trimester abortion, the number of public hospitals providing either routine or optional training has decreased in the past 10 years. One explanation for the decrease might be that fewer abortions are performed in hospitals—52 percent in 1973 but only 18 percent in 1982.[7] The proportion of abortions performed in freestanding clinics has steadily increased over the past decade, and now more than 80 percent are performed in such settings.[8]

Table 2. Percentage distribution of obstetrics and gynecology residency programs, by availability of abortion training and hospital affiliation, according to trimester, 1985 and 1976

Abortion training and affiliation	1st trimester		2nd trimester	
	1985	1976	1985	1976
Routine	**22.6**	**26.3**	**20.6**	**22.5**
Public	28.3	18.8	26.1	16.2
Private				
Non-Catholic	27.2	36.3	25.2	31.0
Catholic	4.9	0.0	2.4	0.0
Military	0.0	u	0.0	u
Optional	**49.6**	**66.2**	**44.0**	**61.5**
Public	58.7	76.2	52.2	72.5
Private				
Non-Catholic	56.3	63.7	48.5	58.4
Catholic	21.9	40.0	22.0	35.0
Military	16.7	u	16.7	u
None	**27.8**	**7.5**	**35.5**	**16.0**
Public	13.0	5.0	21.7	11.3
Private				
Non-Catholic	16.5	0.0	26.2	10.6
Catholic	73.2	60.0	75.6	65.0
Military	83.3	u	83.3	u
Total	100.0	100.0	100.0	100.0

Note: u=unavailable.

Source: Data for 1976 are derived from reference 5.

The increase in public programs that make abortion training a routine part of residency is counterbalanced by a decline among private non-Catholic programs. In addition, although all of these programs offered either routine or optional abortion training in 1976, 17 percent of them offered no training in 1985. Because these institutions account for the largest proportion of residency positions in obstetrics and gynecology, the number of residents in programs that offer abortion training probably declined slightly between 1976 and 1985 (for first-trimester abortion training, from approximately 3,700 to 3,250).

These findings also suggest that Catholic hospitals were less likely to provide abortion training in 1985 than in 1976. Military hospitals were the least likely to provide abortion training in 1985, but no earlier data on their programs are available for comparison.

Only nine percent of programs that provide abortion training reported that all of their residents participate in first-trimester abortion services (see Table 3). Another 56 percent of programs reported that at least half of residents participate, while two percent said that none of their residents did so. Eleven percent of the respondents that provide second-trimester abortion training said that all of their residents participate, another 53 percent reported that at least half do so, and one percent said that none participate (not shown).

Levels of resident participation in abortion training are linked to the program's expectations. Among programs that expect residents to train in abortion as a matter of course and make first-trimester abortion training a routine part of the program, 20 percent stated that all of their residents participate, and another 68 percent stated that at least half participate. Among programs that offer such training as an option, only four percent indicated that all residents participate, and another 51 percent said that at least half do so. The proportions are similar for programs routinely providing second-trimester abortion training compared with those offering optional training.

Private non-Catholic programs have the highest level of resident participation in training for both first- and second-trimester abortion. Ten percent of these institutions that provide training in first-trimester procedures said that all of their residents participate, and another 60 percent reported that more than half of residents participate. In addition, 14 percent of private non-Catholic institutions that offer second-trimester abortion training reported that all residents participate, and another 54 percent reported that more than half participate.

The lowest participation rates are found in the two military hospitals that offer abortion training: One institution reported that no residents participate in training, and the other reported a participation rate of fewer than one-half. Fifty-five percent of Catholic-affiliated teaching programs that offer first-trimester abortion training reported that fewer than half of their residents receive training, and 40 percent of those offering second-trimester training said that fewer than half of residents participate. Among programs that are affiliated with public hospitals and offer first-trimester training, 64 percent reported that half or all of their residents participate, and 61 percent of those that offer second-trimester training reported that half or all of residents receive this training.

Almost half (47 percent) of the respondents said that at least 90 percent of residents who do not participate in first-trimester abortion training decline to do so for religious or moral reasons. Only four percent of institutions reported that 10 percent or fewer of their residents reject abortion training for these reasons. For training in second-trimester techniques, 39 percent of respondents indicated that 90 percent or more of residents who do not receive training decline for religious and moral reasons, compared with six percent of respondents who said that fewer than 10 percent of residents reject training for these reasons. Programs in which relatively small proportions of residents do not participate in training have the highest proportions of nonparticipants citing religious or moral considerations, probably because these programs expect residents to participate unless they have such objections.

Abortion training is nearly always offered to residents in a hospital environment. Less than five percent of training in first-trimester abortion techniques and less than three percent of training in second-trimester procedures occur outside of a hospital. Among Catholic-affiliated teaching programs, however, 45 percent of institutions providing opportunities for first-trimester training make them available outside of the hospital setting.

Well over half of the respondents reported that an attending physician is always present while residents perform first-trimester abortions. One-third reported the presence of attendings either sometimes or most of the time, and fewer than one percent said that residents are never supervised by senior physicians. Catholic institutions are the most likely to have an attending physician present at all times. A higher proportion of hospitals have attending physicians present during second-trimester procedures (68 percent, always; 30 percent, sometimes or most of the time), and the discrepancy between Catholic and non-Catholic institutions is less marked.

The majority of programs that include second-trimester abortion in their residency training provide abortion services up to 20 weeks' gestation (54 percent). An additional 28 percent provide services beyond 20 weeks. Five percent restrict services to 16 weeks or less, and 13 percent, to 17–19 weeks. There are no great differences by hospital affiliation.

Respondents from 70 percent of the teaching programs that provide training in second-trimester abortion reported that the methods that they teach include dilatation and surgical evacuation, prostaglandin infusion and prostaglandin with other agents. Only 40 percent mentioned saline infusion.

Twenty-five percent of respondents estimated that their residents collectively perform no more than one first-trimester abortion per week, and 65 percent said that their residents carry out 2–10 abortions per week, on average. Only 10 percent of institutions reported that residents collectively perform more than 10 abortions a week. Catholic and military programs are twice as likely as other institutions to report that residents perform less than one abortion weekly, while residents in public institutions are most likely to perform more than 20 first-trimester abortions a week.

Nearly two-thirds of respondents reported that their residents average no more than one second-trimester abortion a week. All of the Catholic programs gave this answer, and only one program out of the 160 that include second-trimester abortion training reported that residents collectively perform more than 10 second-trimester procedures a week.

Program directors were asked if their residents were permitted to "moonlight" during their off-hours to gain abortion experience outside of the program. The response was almost evenly divided, with 46 percent saying that residents are permitted to moonlight and 54 percent reporting that they are not. None of the residents in military programs are allowed to moonlight, and fewer than 30 percent of those in Catholic hospitals may do so. Nearly half of private programs and 60 percent of public programs indicated that their residents are allowed to perform abortions in their off-hours if they wish.

Respondents' Comments

In addition to answering specific questions, 161 respondents (65 percent) took the opportunity to comment on abortion training. While their remarks were varied, certain trends are apparent. Eighteen commented that they consider resident training in abortion an important part of residency in obstetrics and gynecology, but that current training is generally inadequate: "Unfortunately, too few see the technical value in learning the procedure well," commented one respondent. Seven directors—none of whose programs include abortion training—stated that abortion is an unacceptable practice and should not be taught to residents: "Our institution is philosophically opposed to abortion and [it] attempts to impart this philosophy to its residents," wrote one director.

Twenty-eight respondents noted that their abortion training programs are restricted by various governing bodies. The restrictions range from federal regulations to limits imposed by hospital boards of trustees. Of the 12 responding military hospitals, 11 mentioned federal restrictions on the performance of abortions, and four respondents expressed dissatisfaction with the restrictions. One respondent wrote, "This is a military facility and is prohibited by law from performing abortions except to save the mother's life. I believe this is deplorable, and both patients and residency training suffer because of this limitation."

Eighteen respondents stated that they thought attending lectures, reading and treating abortion complications—but not participating in actual procedures—was sufficient for residents in obstetrics and gynecology. Six of these 18 statements came from Catholic- and military-affiliated institutions that do not include abortion procedures in their training; the remainder came from programs that offer optional abortion training.

Eleven respondents said that they perceived a certain degree of apathy or a lack of initiative regarding abortion training on the part of residents in obstetrics and gynecology, and sometimes on the part of attending physicians as well. One director commented, "The abortion experience is suboptimal. Enthusiasm for abortion is lacking in both attendings and residents."

Thirteen program directors said that residents' exposure to abortion techniques is limited because most of the area's abortions are performed in freestanding clinics. Thirteen respondents remarked that abortion training is an integral part of the residency programs offered at their institutions and, as such, is not given any special attention. "We do not single [abortion] out as a special or specific item. It is just one of many procedures a resident learns. . . . Highlighting it gives it more exposure than it deserves," observed one survey respondent.

Table 3. Number of obstetrics and gynecology residency programs responding to survey that said they offer training in first-trimester abortion procedures, by estimated percentage of residents participating in abortion training, according to availability of training and hospital affiliation

Availability of training and hospital affiliation	All	% participating			
		0	1–49	51–99	100
Total	**179**	**3**	**59**	**101**	**16**
Availability					
Routine	56	0	7	38	11
Optional	128	3	52	63	5
Affiliation					
Public	80	2	27	44	7
Private					
Non-Catholic	86	0	25	52	9
Catholic	11	0	6	5	0
Military	2	1	1	0	0

Discussion

An important question to ask when assessing abortion training in U.S. residency programs is whether residents have access to such training in the first place. Although the majority of programs (72 percent) offer training, the proportion represents a 22 percent decline from the proportion 10 years ago. Nearly half of the programs allow residents to seek additional experience in their off-hours if they wish, but more than half do not. Among those programs that do not provide any opportunity for abortion training, the proportion that do not allow moonlighting rises to two-thirds. Thus, residents in 18 percent of programs (13 percent of all residents) appear to have no access whatsoever to abortion training. Abortion is the most common surgical procedure that women undergo, and it seems reasonable to expect a graduate of an obstetrics and gynecology training program to understand the procedure thoroughly, even if she or he will not personally perform the operation.

What can we conclude about the quality of abortion training received by residents in obstetrics and gynecology? Using as criteria the presence of attending physicians during abortion procedures, the variety of second-trimester methods taught and the gestational durations up to which abortions are performed, we believe that the structure of existing training programs is generally adequate. In 85 percent of programs, residents performing first-trimester abortions are supervised by attending physicians all or most of the time; this proportion is nearly 90 percent during second-trimester abortions. Nine out of ten programs that offer first-trimester training also offer second-trimester training. Nearly 85 percent of programs that teach residents to perform second-trimester abortions do so up to 20 weeks or more of gestation, and the same proportion of programs teach two or more methods of performing second-trimester abortions.

Any problems related to the quality of training seem to stem from the inadequate abortion caseloads found at most hospitals. Because only 13 percent of all abortions in 1985 were performed in hospitals,[9] residents may not acquire enough experience to become truly competent. Ten years ago, the failure of hospitals to provide abortion services was also seen as an element contributing to the inadequacy of abortion training,[10] and the hospitals' share of abortions has decreased even further since then. The finding that only a small proportion of respondents indicate that their residents collectively perform more than 10 abortions a week supports the conclusion that most hospital abortion caseloads are not sufficient for residency training purposes.

The authors of earlier studies on abortion training in the United States predicted that inadequate training could result in a lack of abortion services in the future.[11] However, between 1975 and 1985, progressively larger numbers of American women obtained elective abortions each year, resulting in an increase in the annual number performed of about 50 percent.[12] Yet the results of our survey show that the number of residents being trained to perform first- and second-trimester abortions may have declined during that same period. In addition, although most gynecologists believe that abortion services should be available to women, a much smaller proportion (34 percent) actually perform abortions themselves.[13]

These data support the premise that abortion, like many other medical services, has become increasingly specialized. Most abortions are performed in freestanding clinics that are planned, equipped and staffed especially for this purpose.[14] The clinics employ physicians who are skilled in abortion techniques and who perform the operations frequently. Among the approximately 70 percent of residents identified in this survey as having received some training in abortion, only a small proportion will perform the operation frequently. Where demand for the operation is sufficient, it appears that a relatively small number of interested, skilled individuals can provide high-quality services to a large number of women.

Any greater emphasis on, or greater availability of, abortion training in residency programs would, therefore, appear unlikely to have much effect on services in urban areas, where high-quality abortion services are already widely available. However, increased attention to this aspect of obstetrics and gynecology training might have an effect in nonurban areas, where demand is lower and where specialized abortion services are far less likely to be available. In nonmetropolitan areas, there is a greater dependency than in urban areas on physicians in hospitals and office practices to perform abortions.

There is good evidence to suggest that training makes a difference in the degree of safety with which gynecologists perform abortion,[15] but there is no guarantee that properly trained physicians will provide abortion services when they begin private practice. Political and religious attitudes toward abortion are generally more conservative in nonmetropolitan than in urban areas, and that may have as much to do with limited access to abortion in these areas as does inadequate training of physicians.

How can residency programs for obstetrician-gynecologists ensure adequate training in surgical procedures that are more and more commonly and efficiently performed outside of the hospital setting? (Because of changes in the health care system, advances in technology and pressure on hospitals to contain costs, this is a problem not only for abortion services but for any number of surgical and diagnostic procedures.) Our findings indicate that training opportunities for abortion are declining, and they will undoubtedly continue to do so, unless changes are made in hospital services and training settings. For example, hospitals that do not already have clinic-based abortion services could establish them.[16]

If, for political and economic reasons, hospitals continue to reduce abortion services, adequate opportunities for resident training must still be made available. One way to expand such opportunities would be to arrange rotations for residents in local abortion clinics. The clinics would provide specialist supervision and would pay a portion of the resident's salary. In return, the clinics would receive inexpensive physician services for their patients and would benefit from the prestige and intellectual stimulation associated with the affiliation with an academic institution. The teaching hospitals would benefit from adequate numbers of abortions to ensure proper training, from consistent and competent specialist supervision for their residents and from the savings on residents' salaries.

Teaching hospitals are unlikely to provide adequate training for future obstetrics and gynecology residents if they continue to rely on traditional approaches. Moreover, a thoughtful and innovative response to the improvement of abortion training could provide the framework for ensuring that residents will be adequately trained in other outpatient procedures as well.

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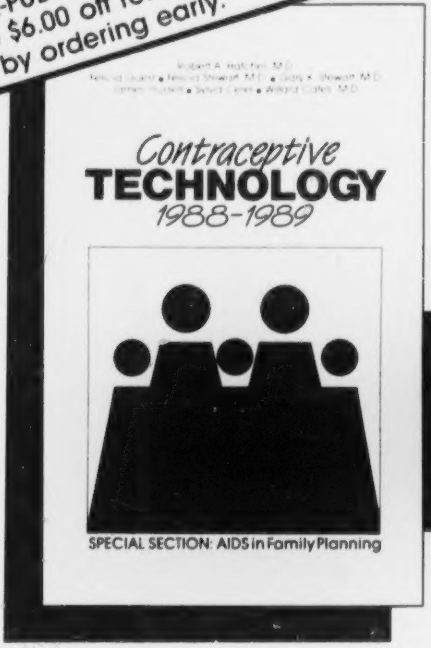

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Rise in Cesarean Births Continues Unabated, Postcesarean Vaginal Deliveries Remain Rare

The use of cesarean section in developed nations has climbed steadily since 1970, according to a study conducted by researchers at the National Center for Health Statistics (NCHS).[1] The U.S. cesarean section rate of 17.9 per 100 hospital deliveries is higher than the rates found in any of 18 other European, North American or Pacific nations, and U.S. women are less likely than those in other countries to have tried vaginal delivery after a previous cesarean delivery. Two other studies confirm the steady rise in cesarean section rates in the United States and show that U.S. physicians rarely allow women who have had a cesarean to attempt vaginal delivery.[2] Nevertheless, the proportion of vaginal deliveries that occurred after previous cesarean sections increased from two percent in 1979 to eight percent in 1984.

International Comparisons

In 1984, NCHS researchers sent questionnaires to national statistics offices and to researchers in 25 developed countries requesting information on trends in cesarean section. After several follow-ups, the investigators received responses from 18 foreign nations.* A few of the responding nations provided data that were not representative of the entire country. For example, information could be obtained for only one province of West Germany—Bavaria. Likewise, the data for Australia applied to only two provinces, accounting for about half of all Australian births. However, 13 nations were able to provide either a complete count of births or nationally representative data.

In 1981 (the most recent year for which nearly all nations could provide data), the rate of cesarean deliveries in the United States (17.9 per 100 births) was higher than the rates reported in any of the other countries. The next highest rates were 15.9 per 100 in Canada and 14.0 per 100 in Sweden. In contrast, Czechoslovakia reported a rate of only 4.7 per 100 in 1981, and the Netherlands, a rate of 4.9 (if all out-of-hospital births are taken into account). Overall, the rate of cesarean deliveries was at least 50 percent higher in the United States than in 15 of the other nations.

Many countries were able to provide information on cesarean sections for most years since 1970. These trend data indicate that the rate has been rising consistently in all of the countries that were surveyed: In 13 nations, no declines occurred in the period, and in the remainder, occasional slight drops were overwhelmed by subsequent increases. However, when the investigators examined the pace at which the incidence of cesarean section had changed, they discovered that rates of increase among the developed countries for which they had data have become more alike over time. In Canada and the United States, rates of increase in cesarean section have been parallel since 1970 and have invariably exceeded those of all the other countries in the study.

In every country, rates of cesarean delivery were highest among women over the age of 35 and among women having their first births. However, the rates among younger U.S. women were substantially higher than those reported among comparable women in any of the other countries.

Eight countries were able to provide data on the proportion of women with a previous cesarean delivery who went on to have a vaginal delivery (referred to as trial labor). Several countries reported relatively high levels of successful trial labor: In Norway, for example, 43 percent of women who had previously given birth by cesarean section and who had another baby in 1981 were able to deliver vaginally, as were 41 percent in Bavaria in 1983, 38 percent in Scotland in 1982 and 32 percent in Hungary in 1983. In contrast, rates of subsequent vaginal delivery were only 14 percent in Australia in 1983, 10 percent in New Zealand in 1982, five percent in the United States in 1983 and four percent in Canada in 1980–1981.

Given the higher levels of cesarean delivery found among younger women in the United States, such low proportions of subsequent vaginal delivery virtually guarantee high levels of repeat cesarean sections. In fact, of eight countries for which data were available, the proportion of all cesarean deliveries that were repeats was third highest in the United States (35 percent). Only in Scotland and Australia were there higher levels (43 percent and 37 percent, respectively), while repeat cesareans represented only 11 percent of such deliveries in New Zealand and eight percent in Hungary. The investigators suggest that the U.S. repeat cesarean rate might have been even higher if the primary cesarean rate were not increasing so swiftly.

The rates at which cesarean deliveries are performed because of certain childbirth-related complications varied widely by country. In each of seven categories examined, the rate of cesarean delivery in the United States was higher than that of almost any other country. For example, in the United States, cesarean section was performed in 76 percent of breech births, a rate substantially higher than the rates in Canada (54 percent), New Zealand (47 percent), Norway (45 percent) and Hungary (39 percent); only Sweden had a higher rate—93 percent. Sixty-nine percent of cases in the United States in which fetal distress was diagnosed were delivered by cesarean section, compared with 41 percent of such cases in Sweden, 35 percent in England and Wales and less than 25 percent in Canada, Denmark and Scotland.

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*Australia, Austria, Belgium, Canada, Czechoslovakia, Denmark, England and Wales, the Federal Republic of Germany (Bavaria), Finland, France, Hungary, Japan, the Netherlands, New Zealand, Norway, Portugal, Scotland and Sweden.

U.S. Trends

A pair of studies examining rates of cesarean delivery in the United States were undertaken recently by the National Institute of Child Health and Human Development. One used national data from the Commission on Professional and Hospital Activities, representing short-term, nonfederal general hospitals that subscribe to the commission's services.[1]

The data from this study indicate that in member hospitals, the rate of cesarean deliveries rose steadily, from six percent in 1970 to 21 percent in 1984. Thirty-six percent of all cesareans performed in 1984 were planned because the woman had had a previous cesarean delivery, up from 31 percent in 1978. The next most common reason for a cesarean birth, dystocia (prolonged labor, abnormal pelvis or disproportion between the size of the fetus and the woman's pelvis), accounted for 28 percent of cesarean deliveries—down slightly from 31 percent in 1978. The investigators also observe that the proportion of all births that were repeat cesareans grew from two percent in 1970 to about eight percent in 1984.

Among women who had had a cesarean delivery, the proportion who had a subsequent cesarean birth dropped slightly, from 99 percent in 1978 to 96 percent in 1984, indicating that some physicians are growing more willing to let women attempt trial labor. However, the proportion of women with breech presentation who underwent a cesarean delivery climbed from 12 percent in 1970 to 80 percent in 1984, and the cesarean rate in cases of other types of malpresentations rose from 11 percent to 50 percent in those years.

The researchers point out that repeat cesareans contributed to 33 percent and 47 percent of the overall rise in cesareans in the periods 1974–1978 and 1978–1984, respectively. The three percentage-point decline in the repeat cesarean delivery rate, they note, "kept the overall cesarean delivery rate from being even higher." They conclude that "existing evidence does not indicate that vaginal birth after previous cesarean is becoming widely accepted.

The occurrence of trial labor was examined in another study by some of the same researchers.[4] They used a stratified random sample of U.S. hospitals that had performed at least five deliveries in 1984. All hospitals with 5,000 or more births were surveyed, as were 33 percent of those responsible for 2,000–4,999 births, 14 percent of those reporting 1,000–1,999 births, 13 percent of those with 500–999 births, eight percent of those with 250–499 births and four percent of those with 5–499 births. Of a total of 4,864 U.S. hospitals, 538 were selected. The overall response rate, including the results of one mail follow-up and a later telephone follow-up, was 87 percent. The survey results were then weighted to represent all U.S. short-term hospitals.

These data indicate that the proportion of cesarean deliveries performed in U.S. hospitals rose from 14 percent in 1979 to 19 percent in 1984. In 1979, hospitals with a large number of deliveries were somewhat more likely than those with smaller obstetric practices to do cesareans, but this differential had declined considerably by 1984.

As in the other study, these data showed that the proportion of all women giving birth who attempted trial labor rose from about two percent in 1979 to eight percent in 1984. The absolute size of the increase was greater at larger hospitals: At hospitals where there were at least 5,000 deliveries, the percentage of women who tried to deliver vaginally rose from 10 percent in 1979 to 25 percent in 1984. However, the proportionate increase was greatest at the smallest hospitals: Among hospitals where there had been 1,000–1,999 births, for example, the incidence of trial labor rose by more than 400 percent, compared with a 150 percent increase at the largest hospitals. Nevertheless, a majority of hospitals (ranging from 79 percent of the smallest to 30 percent of the largest) reported that no women undertook trial labor in 1984.

When reasons for cesarean section were studied, the investigators found that the proportion of cesarean deliveries performed because of fetal distress rose slightly between 1979 and 1984 (from 14 to 21 percent), while the proportion done because of dystocia, breech presentation or some other reasons fell very slightly.

Although trial labor was more common in 1984 than in 1979, the researchers conclude, "the changes have not been sufficient to stem the rising cesarean delivery rates. This survey and other national surveys provide no evidence that cesarean delivery rates are leveling off or decreasing."

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Inequities in the Award And Payment of Child Support Persist in U.S.

Only six out of every 10 American women raising children whose fathers are absent are awarded child support, and one out of every four women who are owed such support never receive payment. Black women, never-married women, women who have not completed high school and women under 30 years of age are considerably less likely to be awarded child support than are others, and almost half of those who are not awarded payments are poor. These are some of the major findings from a survey carried out in 1984 by the Bureau of the Census.[1]

Findings

In 1984, there were almost nine million U.S. women raising children whose fathers were not living in the household. Of these, nearly 60 percent had been awarded a court order or had obtained a voluntary agreement from the father to provide child support, and the remaining 40 percent were totally dependent for such support on sources other than the father. Only one-half of the women who were owed child-support payments received the full amount due them in 1983; one-quarter received partial payment; and one-quarter received no payment at all. However, the proportion of all women awarded child support who received at least some payment (full or partial) rose from 72 percent in 1981 to 76 percent in 1983. Nevertheless, there were 3.6 million women in 1983 who either wanted child support but were not awarded it or were owed child support but did not receive any payment.

Of the women awarded child support, those who received payment had an average annual money income of $13,130 (including $2,340 of child-support money), whereas those who did not receive payment had an average income of $8,430. Women who had not been awarded child support had an average income of $7,390.

Only 34 percent of black women and 41 percent of Hispanic women, compared with 67 percent of white women, had been awarded child-support payments. Once awarded, the rate of receipt did not vary by race or Spanish origin, but black and Hispanic women received smaller average payments than did white women.

The award of child support also showed some variation by marital status: Only 18 percent of never-married mothers and 41 percent of currently separated mothers, compared with 76 percent of ever-divorced mothers, had been awarded support. On average, never-married women who were owed child support received less money than did ever-married women ($1,130 vs. $2,410, respectively).

Women under the age of 30 and those who had not completed high school were also less likely to have been awarded payments than were older or better educated women: Forty-four percent of women under age 30, compared with 65 percent of older women, had been awarded child support. (However, among women who were owed payments in 1983, there was no significant difference by age in the proportion who actually received them.) Women under 30 who received child support were paid $1,720, on average, whereas those aged 30–39 were paid $2,360 and those aged 40 and older were paid $2,970. Forty-two percent of women who had not graduated from high school had been awarded child support, compared with 71 percent of those who had graduated from college: The former group received an average annual payment of $1,540, whereas the latter received an average of $4,120.

Another factor related to the award of child support was the number of children living with the mother: Women with four or more children were less likely to have been awarded payments than were women with three or fewer children. However, there was no significant difference by number of children in the proportion of women who actually received payments. Average child-support payments to women with only one child were lower than those paid to women with two or more children, but there was no significant difference in the average support payment received by women with two or more children.

Women who were not wage earners were less likely to have been awarded child-support payments than were wage earners (45 percent vs. 64 percent, respectively), and the rate of receipt was lower among women with no earnings than among those with some earnings. A higher proportion of women in managerial, technical and skilled production occupations were awarded payments than were women in service or operator occupations (68 percent compared with 56 percent, respectively). Further, women in managerial and technical occupations were paid an annual average of $2,640, while service workers and operators were paid $1,840.

In all, about one-third of the mothers living with children whose fathers were absent (or 2.9 million women) had incomes below the poverty level in 1983. A substantial majority of these women wanted child support, but only 42 percent had been awarded it. Moreover, 45 percent of the women not awarded child support were living below the poverty level. Only six out of 10 poor women who were owed payments in 1983 actually received them. The data show, however, that the complete payment of child support to women below the poverty level would have had little impact on their poverty status.

Inequities in the award of child support persist: Overall, the award rate in 1983 showed no significant change from the rate in 1981. In addition, after adjustment for inflation, the average amount of annual child support awarded in 1983 ($2,340) showed no change from the average amount awarded in 1981. However, the likelihood that white women, women who had completed high school, women with one child, those under 30 years of age and those with earnings would receive the payments owed them did increase somewhat between 1981 and 1983.

Reference

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Japan's Fertility Trends Linked to Late Marriage, Unique Social Factors, Heavy Reliance on Abortion

Fertility rates in Japan dropped drastically in the years following World War II and have remained close to or below replacement level since the 1950s, although use of modern contraceptive methods such as the pill and the IUD is almost nonexistent. According to several recently published analyses of Japanese fertility trends, the decline in childbearing seems to have been related primarily to deferred marriage, a high degree of reliance on induced abortion and social and cultural factors that differentiate Japan from the rest of the developed world.

Samuel H. Preston, director of the Population Studies Center at the University of Pennsylvania, points out that fertility trends in Japan in the decades since the end of World War II differ greatly from those of most other developed countries in that Japan experienced no baby boom in the 1950s.[1] The Japanese total fertility rate (TFR) was at its highest level in the immediate postwar years (4.54 births per woman in 1947, for example), then began a steady, rapid decline to replacement level; by 1957, the Japanese TFR was 2.04 births per woman, and it has declined very slowly since then, to 1.80 in 1983.

According to Preston, fertility decline is normally related to factors such as the increased use of modern contraceptives and the economic involvement of women outside the home. However, this has not been the case in Japan.[2] For example, in 1962, when fertility was below replacement level, only 13 percent of Japanese women worked outside the home. In addition, fertility fell drastically before the advent of the pill and IUD; in fact, the pill still may not legally be prescribed for contraceptive purposes in Japan. Preston notes that 82 percent of contraceptive users relied on the condom in 1979.

An important factor in the sudden decline in fertility following World War II was the legalization of abortion. Between 1949 and 1955, the number of abortions reported by Japanese physicians rose from 246,000 to 1.2 million. In recent years, the practice of abortion may have declined; in 1983, 568,000 abortions were reported. However, it is well known that abortions in Japan have been substantially underreported through the years, so the true abortion trend is unclear.

Widespread societal changes in the aftermath of World War II may also have contributed to the fertility decline in Japan, Preston observes. During the occupation of Japan, the legal system was changed to ensure women's rights, equality of inheritance and equality of opportunity for all social classes—all changes that undercut the power of the patriarchal family. In addition, Preston suggests, the sudden decrease in per capita income that occurred in the years after the war, accompanied by a rapid postwar decline in mortality, left the Japanese people worried for the first time about overpopulation. The public debate that followed several government reports on population growth apparently convinced many Japanese that the country was overcrowded, and these reports provided important support for the liberalization of abortion laws.

Overall, young Japanese women have been much less likely to marry than have their counterparts in a number of other developed countries, especially in recent years.[3] In 1980, 78 percent of 20–24-year-olds were unmarried, compared with 57 percent in the United States, 55 percent in Canada and Australia and 49 percent in New Zealand. Preston cites previous research indicating that 58 percent of the Japanese fertility decline between 1970 and 1980 could be attributed to a decline in the proportion of young women who were married.[4]

Although early marriage has become less common among Japanese women, their fertility once they marry is initially very high. Married women aged 20–24 had children at a rate of 334 births per 1,000 in 1930, 346 per 1,000 in 1970 and 352 per 1,000 in 1980. In contrast, the fertility rate among married women aged 30–34 fell from 240 per 1,000 in 1930 to 95 per 1,000 in 1970 and 83 per 1,000 in 1980; among 35–39-year-olds, fertility rates dropped from 183 per 1,000 in 1930 to 22 per 1,000 in 1970 and 14 per 1,000 in 1980. According to Preston, "These figures imply very rapid childbearing in the early years of marriage. . . . Of the Japanese marriage cohort of 1961–1970, three-quarters had a first birth within the first two years of marriage." There were no educational differences in the pace at which women had their first births.

An indication of the eagerness for a child among newly married Japanese couples is their low level of contraceptive use. Preston cites a nationally representative survey carried out in 1984 by the Mainichi newspaper chain that found only 21 percent of married Japanese women to have used a contraceptive method prior to their first birth; furthermore, just 46 percent had done so before their second birth. The latter proportion had actually slipped somewhat from the 50–55 percent level observed in the 1970s.

In addition, while the incidence of out-of-wedlock childbearing rose steeply in many Western countries, it declined in Japan. The proportion of nonmarital births in the United States climbed from four percent in 1949 to 19 percent in 1981; in Canada, the proportion rose from four percent in 1949 to almost 16 percent in 1982. However, in Japan, the proportion of out-of-wedlock births fell from around three percent in 1949 to less than one percent in 1980. "What is perhaps most strikingly different about Japan," Preston notes, "is the degree to which marriage remains a specialized institution: Extramarital fertility is exceedingly low; marital fertility in the early years of marriage is quite high; and divorce is still rare and less frequent than a century ago."

Shigemi Kono, director-general of Tokyo's Institute of Population Problems, explains that there are good reasons for Japan's low fertility, despite the small proportions of Japanese women who work and the high level of condom use among contraceptive users. Japan's Confucianism "emphasizes the ethical value of hard work, asceticism, frugality, and regularity in the daily conduct of life." The collision of such a work ethic with the limited resources and crowded conditions in Japan (where 120 million people live in an area smaller than the state of California) leads, in turn, to "fierce competition within society."[5]

According to Kono, the competition for the best jobs and positions at the best schools is so intense that great importance is placed on good schooling for children, and such schooling requires enormous investments by the parents in time, money and effort. Children begin preparing for competitive examinations in primary school, even in kindergarten. Under such circumstances, "children become financially and psychologically expensive." A 1984 survey showed that about 20 percent of the monthly expenditures of families in Tokyo go toward sending their children to preparatory schools or after-school cram sessions or hiring tutors. Kono points out that while the average Japanese couple would prefer to have three children, most say they expect to have two. A 1982 study asked parents why they expected to have fewer children than they would like; the four most frequently cited reasons, Kono observes, were the cost of education, the cost of raising children, the heavy physical and psychological burdens involved in raising children, and the lack of enough space in the family's apartment for another child.

Kono also points to the long postponement of marriage as another key element of low fertility in Japan. The average ages at marriage for men and women are now 28 and 25 years, respectively. Since premarital childbearing is so rare, and women's reproductive capacity begins to decline after age 30, this delay in marriage effectively shortens the reproductive span of most couples. One factor contributing to late marriage is the cost of housing, especially since a young man is not expected to marry until he can maintain a household without support from his parents. In addition, wedding ceremonies themselves are very expensive. Finally, the bride is expected to provide all of the appliances and furnishings for the couple's new house, a demand that requires a great deal of work and saving.

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Status of Women May Be Dependent in Part On Country's Sex Ratio

In an influential work published in 1983, social psychologists Marcia Guttentag and Paul F. Secord propounded the idea that the number of males relative to the number of females in a given society has profound effects on women's roles. In a recent study, sociologists Scott J. South and Katherine Trent explore Guttentag's theory of the influence of the sex ratio (the number of males per 100 females) on women's status and roles and conclude that the effect, while considerable, is more pronounced in developed than in developing countries.[1] They suggest that among the reasons why Guttentag's theory is not consistently applicable in developing countries is the fact that migration patterns play a strong role in distorting sex ratios in those parts of the world.

The Sex Ratio Theory

Guttentag argues that women's status is higher in societies where there are proportionately more women than men in any given age-group. The theory rests on the belief that where women are in short supply, men will attempt to restrict women's alternatives by prizing virginity until marriage, by emphasizing monogamous relationships and by valuing highly the roles of mother and homemaker. In such societies, most women will marry, they will do so at an early age and their fertility will be high. By contrast, where women are in oversupply, the theory maintains, the surplus of women will encourage promiscuity among males, illegitimacy and divorce rates will be high, and, because women cannot depend on lasting marital relationships, they will turn to extrafamilial ambitions and to the pursuit of educational and career goals. Moreover, low sex ratios may provide an impetus for feminist movements.

To support her theory, Guttentag relied on historical examples from classical Greece, medieval Europe, the American frontier and societies composed of Orthodox Jews. The researchers testing Guttentag's claims use data from 117 developed and developing countries to explore the influence of sex ratios on eight aspects of women's roles: the proportion married; age at marriage; the total fertility rate; the divorce rate; the proportion of births occurring among unmarried women; the female literacy and labor-force participation rates; and the female suicide rate.

The overall sex ratio in the 117 countries ranged from 80 men per 100 women aged 15–49 in Swaziland to 119 per 100 in Brunei. The mean for all countries was 99.4. The researchers explain that international variation in the sex ratio at birth, differing levels of mortality among young adults and sex differences in migration each play an important part in explaining the wide range in the sex ratio.

The researchers measured the degree of association (the correlation coefficient) between the sex ratio in each country and the eight dependent variables. They did not find the positive correlation between undersupply of women and marriage and fertility rates that they would have expected if Guttentag's theory had been supported. Neither did the expected negative associations emerge between a high sex ratio and age at marriage, illegitimacy, divorce, female literacy, labor-force participation and suicide. However, when statistical controls for level of economic development were added to the analysis, the relationships were in the expected direction for all 117 countries. That is, a relative undersupply of women was associated with higher rates of marriage and fertility and wth lower rates of divorce, illegitimacy, female labor-force participation and female literacy. The strength of the relationships in either direction remained weaker in developing than in developed countries.

The researchers suggest that in developing countries particularly, "sex differentials in rural-to-urban migration may create high sex ratios in some areas and quite low sex ratios in others." The resulting imbalance in the sex ratio may account for the low degree of association the researchers find there between the supply of women and their overall status. However, the investigators point out, factors other than migration also contribute to the imbalance in sex ratios: geographic variations in the sex ratio at birth; differentials in male and female mortality; and a country's overall mortality rate.

According to South and Trent, their "findings offer a mixed, but generally favorable evaluation of Guttentag's . . . theory." The researchers recommend further investigation into the social implications of population sex structure for women's roles in society, and pose several questions. Do women, in countries where they outnumber men, enter the labor force in larger numbers because of the potential marriage squeeze, or does the marriage squeeze propel them into the labor force? And in countries where men strongly outnumber women, are divorce rates low because women have large families, or do they have many children as a result of low divorce rates?

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Barrier Methods Used With Spermicides Lower Risk of Tubal Infertility

White women who use a barrier method of contraception are at reduced risk of infertility resulting from damage to the fallopian tubes. Women who use spermicides in conjunction with a barrier method are at even lower risk. The use of oral contraceptives does not significantly increase or decrease a woman's risk of tubal infertility, but there is some evidence that the level of risk is related to the amount of estrogen and the type of progestogen contained in the pill. These are the major findings of a recent case-control study of the relationship between tubal infertility and contraceptive use, carried out among white women attending seven North American hospitals between 1981 and 1983.[1]

The case group consisted of 283 nulliparous women who were diagnosed as having tubal adhesions or tubal occlusions when admitted for treatment at an infertility center associated with one of the participating hospitals. The control group was drawn from 3,833 women admitted to the maternity wards of these hospitals for delivery.

Information on the marital, medical and contraceptive histories of both cases and controls was obtained in personal interviews. The women were also asked about their age at first intercourse, age at regular intercourse, frequency of coitus and number of sexual partners.

The investigators carried out multivariate regression analysis to determine the effect of the use of specific contraceptive methods on a woman's risk of tubal infertility. In the calculation of relative risk (RR), the researchers controlled for respondents' age, religion, level of education, smoking status, time between menarche and date of hospital admittance, hospital center and number of sexual partners (which was found to be the strongest predictor of tubal infertility).

Women who had used a barrier method or the pill for at least three consecutive months were considered to be ever-users of those methods. Women who had used an intrauterine device (IUD) for any length of time were considered to be ever-users of the IUD. If subjects had used more than one contraceptive method, the risk associated with the longest-used method was statistically adjusted to account for the use of the other methods. The researchers also analyzed the effect of contraceptive use on tubal infertility that is associated with a history of pelvic inflammatory disease (PID), which is known to be linked with tubal damage.

Compared with nonusers, ever-users of barrier methods were at significantly reduced risk of developing tubal infertility (RR=0.6); pill ever-users were neither at significantly increased nor at significantly decreased risk (RR=1.2); and IUD users were at significantly increased risk (RR=2.0).

When the analysis was restricted to cases who had previously had PID, barrier methods again were found to offer significant protection against the risk of tubal infertility (RR=0.5). Pill use increased this risk, but not significantly (RR=1.8). IUD use did increase the risk significantly, and the level of risk was even more elevated than it had been in the first analysis (RR=3.9).

The data indicate that use of the condom without spermicides decreased the risk of tubal infertility, but the reduction was not statistically significant (RR=0.7). However, use of the condom with spermicides, and use of the diaphragm or cervical cap (presumably with spermicides) reduced the risk significantly (RR=0.5). On the other hand, use of spermicides alone was not associated with any increased or decreased risk (RR=1.0). There was no clear or consistent trend by age at first use or duration of use in the risk of tubal infertility among users of barrier methods.

Although the researchers found no significant association between oral contraceptive use and tubal infertility, the evidence shows that women who had used "low-estrogen" pills were at reduced risk when compared with those who had used "high-estrogen" pills (RRs=0.9 and 1.5, respectively).* Further, although there was no trend in risk by age at first use, women who had first used low-estrogen pills between the ages of 20 and 24 were less likely to experience tubal infertility than were those who had first used such preparations at younger or older ages (RRs=0.6, 1.2 and 1.8, respectively). In addition, women who had first used high-estrogen pills before the age of 20 were at significantly greater risk than women who had first used these pills at 20–24 years of age and at ages 25 and older (RRs=1.8, 1.2 and 1.1, respectively).

The researchers conclude that the use of low-estrogen pills does not place women at increased risk of infertility (or PID). They point out that pills with low estrogen concentrations may inhibit sperm in contaminated semen from penetrating the cervical mucus, whereas pills with high estrogen concentrations may favor such penetration. The risk of tubal infertility and of PID, the investigators suggest, may be similarly influenced by whether the cervical mucus inhibits or favors the ascent of bacteria, either directly or when carried as a contaminant in semen.

The investigators further conclude that of all contraceptive methods, barrier methods offer women the clearest protection against tubal infertility and PID, particularly when used in conjunction with spermicides. They point out, however, that further research is needed to determine which component—chemical or mechanical—contributes most to the reduction in risk. In a commentary on the study, Willard Cates, Jr., director of the Division of Sexually Transmitted Diseases at the U. S. Centers for Disease Control, points out that "barrier methods (ideally used with spermicides) will not only prevent unplanned pregnancy in the short run, but also preserve desired fertility in the future."[2]

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*Low-estrogen pills contain 50 µg or less of estrogen plus norgestrel or norethindrone, progestogens that have little estrogenic activity. High-estrogen pills contain 75 µg of estrogen, or lower doses of estrogen together with ethynodiol diacetate or norethindrone acetate, progestogens with enhanced estrogenic activity.

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Adolescent Reproductive Behavior Is Influenced By the Attitudes and Values of Parents and Peers

Both parental and peer attitudes and values have an effect on the reproductive behavior of teenagers, according to two recent studies. The first study, based on data from the High School and Beyond Survey, finds that adolescent children who believe that their parents have high educational expectations for them and care about their lives are less likely to have an out-of-wedlock birth.[1] The second study demonstrates that most teenage women attending a family planning clinic have the support of either their friends or their mothers in seeking birth control, but that very few seek support from both sources.[2] Black teenagers are more likely to seek the support of their mothers, and white middle-class teenagers, the involvement of their peers. The investigators believe that these patterns stem from profound differences in the family structure and value systems of blacks and whites in the United States.

The High School and Beyond Survey

The High School and Beyond Survey is based on a nationally representative sample of 15,000 young women who were interviewed first in 1980, while they were in their sophomore year of high school, and subsequently in 1982 and in 1984. The survey obtained information on family background, socioeconomic status, family and peer aspirations and attitudes concerning schooling and employment, academic performance and misbehavior in school, the kind of sex education the young women had received and their knowledge of birth control. The young women were questioned in depth about their and their families' religious values, their sense of control over their own lives and futures, the degree of concern their parents demonstrated about school achievement and academic goals and their parents' attitudes toward childbearing outside of marriage. The investigators then examined the influence of all these factors on the likelihood that the young women had had a premarital birth during the two years following the baseline survey. The analysis controlled for single-parent status, mother's work status and education, region of the country, number of siblings, family income and type of high school. However, the intermediate variables between attitudes and childbearing—premarital sexual activity, pregnancy, the decision to terminate or to continue the pregnancy and the decision to marry or not to marry the father—were not included in the study.

Analysis showed that for white adolescent girls, feeling that they had control over their lives, having high educational ambitions and having parents who monitored their homework and talked with them often each reduced by 23 percent the likelihood of an out-of-wedlock birth. Moreover, this likelihood was reduced even more if the teenagers believed that their parents showed a great deal of concern about their lives (a 36 percent reduction), and also shared the high educational expectations that they themselves had (42 percent). For black teenagers, the statistically significant factors were parental concern about their lives and the parents' (but not the girls') expectations for their education. For teenage girls of both races, the likelihood of a premarital birth was approximately doubled if the adolescent was going steady with a boyfriend. It also increased if the girl had experienced discipline problems at school (by 34 percent among whites and by 24 percent among blacks). The analysis found no statistically significant relationship between prior sex education or knowledge of contraception and the likelihood of a premarital birth.

The investigators conclude that the "attitudes and values of adolescents and their parents play an important role in reducing the chances of out-of-wedlock childbearing and thus may be a critical factor in addressing the problem of teenage pregnancy and childbearing in the United States."

Family Planning Clinic Study

The second study was carried out among 2,879 teenagers who made a first visit to one of 21 health department family planning clinics in Maryland between October 1980 and July 1981 and who subsequently began using the pill. The young women were questioned about the involvement of others in their decision to attend a clinic and the extent to which these other people approved of their attendance and use of the pill. The participants in the study were reinterviewed by phone six and 12 months after their initial clinic visit to determine what contraceptive method they were using at those times.

Just over half of the young women said that the decision to come to a clinic had been theirs alone, one-fifth said it had been solely the decision of another person, and one-quarter said the decision had been a shared one. The most commonly identified other participants in the decision were girlfriends (29 percent), mothers (26 percent), boyfriends (25 percent) and other relatives (14 percent). Two-thirds of the girls came accompanied by another person (mainly a girlfriend or relative other than the mother), and eight out of 10 said that their boyfriend or a girlfriend knew they were going to the clinic. One-half of the clinic patients said that their mothers knew they were attending a family planning clinic, and one-quarter said their fathers knew.

Approval of the clinic visit and of the teenager's subsequent use of the pill was uniformly high among all those involved in the decisions, with the exception of the fathers, of whom six out of 10 did not approve of either. However, the majority of young female patients said that their fathers' approval was less important to them than that of their mothers, boyfriends or girlfriends.

When these data were analyzed by race, some distinct patterns emerged. Black young women were much more likely than whites to involve their mothers in the clinic visit, whereas the young black girls were much less likely than their white counterparts to involve their boyfriend or a girlfriend. These patterns held even after controls were introduced for mother's and father's education, mother's and patient's age, the closeness and duration of the relationship with the boyfriend and prior pregnancy. In addition, approval of the daughter's contraceptive use was "markedly higher among black than among white parents, and was least likely if the young woman's mother [was] white and relatively well educated." The investigators characterize this finding as somewhat counterintuitive, since women with more education would be expected to approve more highly of their daughters' use of a birth control method.

The researchers advance two possible interpretations of their findings. They suggest that contraception has different meanings (in terms of conformity or rebellion) in different social and family contexts. They use the analogy that "in the white middle-class subculture, obtaining a contraceptive method is equivalent to buying a cigarette lighter; among blacks, it is like putting on a seat belt." Secondly, they propose, in families where the parents approve of contraception for their teenage daughters, young women have less need to turn to friends for support.

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USSR: Gap in Fertility Levels Among Regions Appears to Be Narrowing

Although fertility rates in the Soviet Union vary widely by region, there are indications of some convergence in the differing levels. Nevertheless, because of the age structures found in some high-fertility regions, population growth rates in these areas will continue to be much higher than the average for the entire Soviet Union, according to French demographer Alain Blum.[1]

The researcher examined fertility trends in two republics—Estonia and Uzbekistan—that represent cultural and demographic extremes within the Soviet Union. Estonia is one of three Baltic republics (the other two are Latvia and Lithuania), which constitute only three percent of the Soviet Union's total population of about 279 million. Uzbekistan is one of five predominantly Muslim Central Asian republics (the others are Kazakhstan, Kirghizia, Tadzhikistan and Turkmenistan), which account for 17 percent of the country's total population.

Fertility in Estonia has been low for over 30 years. The total fertility rate (TFR) was estimated to be 2.4 in 1950, 2.2 in 1970 and 2.1 by 1983, and the population growth rate has been below one percent a year since the 1950s. In Uzbekistan, in contrast, the TFR went from 4.4 in 1950 to 5.8 in 1970 and to 4.6 by 1983, while the annual population growth rate remained at about three percent during that period. Blum claims that Uzbekistan's pattern of rising and then declining fertility is typical of those regions of the Soviet Union that are undergoing demographic transition. (A similar pattern can be seen in the republic of Armenia, where the TFR of 4.2 in 1950 rose to 4.7 in 1959 and then fell to 2.4 by 1983.)

According to Blum, fertility rose in Uzbekistan during the 1960s as a result of a number of factors: general improvements in health standards; a decline in the duration of breastfeeding, as increasing numbers of women entered the labor force; and earlier marriages. In 1970, 34 percent of 18–19-year-old women in Uzbekistan were married (compared with only 11 percent of women of that age in Estonia). The largest increases in age-specific fertility rates were observed among women 15–29. Blum believes that the declines in fertility registered in Uzbekistan in the 1980s are probably partly a result of the increased prevalence of contraception, which is mainly being practiced by older women who do not want to have any more children.

The investigator speculates (since reliable data by region are unavailable) that legal abortion is performed less frequently in the Central Asian republics than in the rest of the country.* However, recent evidence indicates that in the Soviet Union as a whole, the ratio of illegal to legal abortion is on the order of 1:2.7.[2]

Because the population of Uzbekistan is predominantly very young (41 percent are under the age of 15, compared with 20 percent in Estonia), the recent decline in fertility has not yet had an impact on population growth rates, which are expected to remain high for some time. As a result, Blum concludes, the wide variation in the population growth rates of the Baltic and Central Asian regions will persist. However, he predicts that the "convergence in fertility levels is undoubtedly indicative of a narrowing . . . of the gap in behavior" that exists between these two profoundly different regions of the Soviet Union.

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Comment

Single-Parent Families: Are Their Economic Problems Transitory or Persistent?

By Greg J. Duncan and Willard Rodgers

Introduction

Few social phenomena in the United States have attracted as much attention as the growth in the number of single-parent families and the attendant "feminization of poverty." From 1970 to 1985, the number of two-parent families with children under 18 years of age dropped by five percent and the proportion of all families that were headed by both parents fell from 87 percent to 74 percent. Over the same period, the number of single-parent families headed by women more than doubled, from 3.4 to 7.7 million. (Although the number of families maintained only by fathers was much smaller, the rate of growth of such families was at least as high as that for female-headed families—from 0.4 million in 1970 to 1.0 million in 1985.) In addition, between 1970 and 1984, the proportion of the poor who were living in families headed by a nonelderly woman jumped from 34 percent to 43 percent.[1]

The growth in the proportion of female-headed families in the United States was particularly high during the 1960s and the 1970s.[2] There had been much less change during the 1940s and 1950s, and the rate of change appears to have diminished during the late 1970s and early 1980s. Racial differences in these proportions are large and persistent: Over the entire period, the proportion of families headed by women has been approximately three times as high for black as for white women.* By 1985, 18 percent of white families were maintained by mothers; the corresponding proportion among blacks was 57 percent.[3]

Female-headed families come about in two distinct ways—through births to unmarried women (i.e., single, separated, divorced or widowed) and through marital dissolution. Both factors have increased markedly since the early 1960s. It is estimated that six percent of white children born between 1960 and 1964 were born to unmarried women, and the proportion increased to 11 percent of all births from 1975 to 1979.[4] Among black children in the same birth cohorts, the increase was from 30 percent to 57 percent; thus, for both races the proportion almost doubled between 1960 and 1980. In addition, rates of marital dissolution prevailing in the period 1963–1965 indicate that 22 percent of white children experienced parental separation before age 16, while rates for the period 1977–1979 indicate that the proportion rose to 38 percent. Among black children, experience with parental separation between the same two periods rose from 42 percent to 73 percent.[5]

Methodology

Trend data such as those discussed above are generally based on cross-sectional samples, which provide information on changes in the proportions of different family types and in the relative economic status of families from one year to another. Such data cannot, however, reveal the frequency with which the family situations of individual children change, the length of time children spend in a particular type of family or the cumulative impact of living in a single-parent family on the economic environment during childhood.

For instance, suppose that each of five consecutive annual cross-sectional surveys showed that one-fifth of all children were living in a single-parent family. This finding would be consistent with an inference that one-fifth of all children spent the entire five-year period in a single-parent household, but it could just as easily mean that all children spent exactly one year out of every five in such a household.

Another important issue is the relationship between family type and poverty status. Such an association could be the result of at least two different causal mechanisms: First, single parenthood, whether the result of out-of-wedlock births or marital dissolution, may be a cause of poverty; on the other hand, poverty might be a cause of illegitimacy and marital instability. As with any association observed at a particular point in time, it is impossible to decide between such causal interpretations on the basis of cross-sectional statistics alone.

In order to shed some light on these issues, we have examined the living arrangements and economic status of children in a dynamic perspective, using data from a longitudinal household survey (the Panel Study of Income Dynamics, or PSID), for which annual interviews were conducted with a representative sample of U.S. households between 1968 and 1984. Much of this analysis will focus on a group of 707 children who were born into these households between 1967 and 1969 and for whom detailed demographic and economic information has been gathered over their first 15 years of childhood. The fact that the PSID data are longitudinal provides an opportunity to examine income dynamics in relation to changes in family status.

Since 1968, the PSID staff have followed, interviewed annually, processed, analyzed and disseminated information on a representative sample of about 5,000 families. At least one member of each family in the sample was in one of the families originally interviewed in 1968. The family is not an unchanging unit; hence, the study has followed the original families that remained intact as well as all members of the original

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*Throughout this article, we use the term "white" to include all racial categories other than black.

families who subsequently left home. Split-off families are formed when children leave home, when couples divorce or when more complicated changes break families apart. Each year, one primary adult in any family containing a member of one of the original families has been surveyed. Interviews are conducted with the head of the household, defined as the husband among married couples. Couples not married but living together for two consecutive interviews are treated as though they are married. This survey procedure produces an unbiased sample of families each year, as new families formed by children leaving home and by divorce mirror corresponding changes taking place in the population at large. As of the 18th wave of data, the sample consisted of some 7,000 families (around 16,000 individuals).

Table 1. Percentage distribution of children born between 1967 and 1969, by number of years spent in a one-parent family, according to race, Panel Study of Income Dynamics (PSID)

No. of years	Total (N=707)	White (N=418)	Black (N=289)
0	64.5	69.7	27.6
1–5	18.9	19.4	16.4
6–10	8.1	6.8	17.6
11–14	4.4	2.5	16.8
15	4.1	1.6	21.6
Total	100.0	100.0	100.0
Mean no. of yrs.	2.22	1.52	7.24

Note: In this and subsequent tables, all Ns are unweighted, but percentages are based on weighted data.

The survey's original design focused on poverty by oversampling lower income and minority households. The sample therefore includes a large enough subsample of black families to permit separate analyses by race. Since the first two years of the study, losses to follow-up have been small, and checks against other data indicate no appreciable sample biases. Weights have been created to adjust for the original oversampling of the poor and for differential nonresponse and loss to follow-up. Percentages presented in the tables and text are based on weighted data.

Table 2. Percentage distribution of all children born between 1967 and 1969, by number of years spent in a one-parent family, according to race and whether they were born into a two-parent or a one-parent family, PSID

No. of years	Race and type of family					
	Total		White		Black	
	2-parent (N=527)	1-parent (N=180)	2-parent (N=371)	1-parent (N=47)	2-parent (N=156)	1-parent (N=133)
0	75.6	0.0	78.0	0.0	48.3	0.0
1–5	14.8	43.6	14.5	60.4	18.1	14.1
6–10	6.7	16.5	5.0	21.1	24.7	8.5
11–14	2.9	11.9	2.4	3.3	8.9	27.0
15	0.0	27.9	0.0	15.2	0.0	50.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Mean no. of years	1.3	7.8	1.0	5.5	3.7	11.9

The sample used in this article consists of children born in 1967, 1968, 1969 or the first two months of 1970 who remained in the PSID in each of the first 15 years following their birth. For children born in 1967, we have used data from 1968 to 1982; for those born in 1968, we have relied on 1969–1983 data; and for those born in 1969 or early 1970, we have used 1970–1984 data. Only PSID sample members are included (that is, persons who were either themselves present in the family in 1968 or whose parent or parents were present).

We have defined a two-parent family as one headed by a married male with the wife present in the household or as one with a man and woman living together for at least one year in what appears to be a permanent cohabitation, and where the child is the family head's child or stepchild. All other living arrangements are loosely termed "one-parent" but are in fact quite diverse.* This residual category consists of families headed by a single parent as well as cases in which the child and his or her mother have remained in the home of the child's grandparents.

The child's living arrangement in each of his or her first 15 years is as reported at the time of the given year's interview. However, family income reported at the time of the interview was received during the previous calendar year. Our income measures, then, use data from the 14-year period beginning in the calendar year following the child's birth (or in 1970 for those born early in that year) but exclude income for his or her 15th year, as that would not have been reported until year 16. In addition, we have not used income for any year in which there was a transition in the child's living arrangement, since annual measures for such a year do not accurately reflect conditions under a one-parent or two-parent household.

Time Spent in One-Parent Families

If we adopt the perspective of the life course of the child, then the most natural way of describing single-parent experiences is by examining the proportions of childhood spent in different family situations. The PSID sample is especially useful for this purpose, since it is reasonably representative of U.S. children born between 1967 and 1969 and provides rich demographic and economic information about their first 15 years of life.

Table 1 shows, for children of both races, the years up to age 15 spent in a one-parent family. Overall, the results indicate that despite the aggregate trends, life in a single-parent family is much more the exception than the rule: Sixty-five percent of the children in this birth cohort spent their entire childhood in a two-parent family. And most of the children who lived at least part of their childhood years in a one-parent family spent a relatively short period of time in such a family. Only one child in 25 spent all 15 years of his or her childhood in a one-parent family, and a similar proportion lived in such a family for 11–14 years. Upon combining these two groups, we find that less than one-quarter of the children who spent at least some time in a single-parent family did so for more than 10 years of their childhood.

However, even though only a small proportion of children spent most of their childhood in a single-parent family, these children account for the bulk of the collective single-parent experiences of all children. About half of the total number of years spent in a one-parent family by all of the children in this cohort was accounted for by just eight percent of those children

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*Throughout this article, the term "two-parent family" refers to situations in which two parents or stepparents lived with the child at the time of the interview and headed the household. The couple need not have been legally married, and both adults need not have been the child's biological or legal parents. "One-parent" refers to all other living arrangements. In about one-third of the one-parent PSID families that existed at the time of the child's birth, the mother headed her own household; in the remainder, the family consisted of a more complex arrangement in which the child was neither the biological offspring nor the stepchild of the head of the household. At older ages, children in one-parent families were increasingly likely to be living in households headed by their mothers.

(not shown). Thus, the "burden" of life in a single-parent home is concentrated among a relatively small number of children.

Large differences in the situations of black and white children are also apparent from the data in Table 1. Among black children, life in a one-parent family is more the rule than the exception. Only 28 percent of black children spent all of their first 15 years in a two-parent household, compared with 70 percent of white children. In contrast, 22 percent of black children spent all 15 years in a one-parent household, compared with less than two percent of white children. Although white children spent an average of 13.5 years in a two-parent family, black children spent only 7.8 years in such a family.

Being born into a one-parent family had major implications throughout childhood, as can be seen in Table 2. On average, children born into a two-parent family spent only a sixth as many of their first 15 years in a one-parent family as did those born into a one-parent family (1.3 years and 7.8 years, respectively). Overall, 15 percent of the PSID children were born into a one-parent family, but this proportion was about four times as high among black children as among whites—43 percent compared with 11 percent (not shown). Exacerbating this racial difference is the much longer period of time that black children born to unmarried mothers can expect to spend in a single-parent household. Such black children spent an average of 11.9 years of their childhood in a one-parent family, more than twice as many as the 5.5 years spent by comparable white children.

Dividing a sample of children into two groups according to whether or not their mothers were married at birth, as we have done in Table 2, obscures important distinctions within each group. In particular, the prior marital history of an unmarried mother has a substantial relationship to the subsequent experience of her children. For example, previous research has shown that white children born in the period 1965–1969 to divorced or separated mothers spent 58 percent of their childhood (up to age 18) in a two-parent family, compared with just 11 percent of children born to never-married mothers.[6] Corresponding proportions for black children in the same birth cohort were 53 percent among children of divorced or separated mothers and 19 percent among children of never-married women.

Table 3 summarizes the highly diverse transitions experienced by children who were born into a one-parent family (15 percent of the total). Most single mothers eventually found either a legal spouse or an informal partner, often soon after the birth of the child; however, not all remained with their partners throughout the rest of the child's first 15 years. Forty-six percent of the children born into a one-parent family made a permanent (with respect to their remaining years of childhood) transition to a two-parent family. The transition occurred after an average of three years, and the resulting two-parent family persisted for the next 12 years of their childhood (not shown). Another quarter of the children born into a one-parent family remained in that situation for an average of about four years, became part of a two-parent family, but then experienced at least one more transition back to a one-parent family.

Not only were black children more likely than whites to be born into a one-parent family, they were also much more likely to remain in such a family for their entire childhood. Half of the black children born into a one-parent family lived in such a family for their entire childhood, whereas this was true of only a small fraction of white children (15 percent). Moreover, most of the white children who were born into a one-parent family but made the transition to a two-parent family remained in the latter type of family for the balance of their childhood, whereas most of the black children who made the transition from a one- to a two-parent family subsequently experienced at least one transition back to a one-parent family. Finally, within each of these groups, black children spent more time in a one-parent family before becoming part of a two-parent family, and less time with two parents before returning to a one-parent situation (not shown).

Other important factors that influence the incidence of single parenthood are the rate at which marriages dissolve (primarily, for couples with young children, through separation and divorce) and the rate at which formerly married persons remarry. One-quarter of all children born into a two-parent family later saw one of their parents depart. Table 4 shows that among the children who experienced such a disruption, over half went to a single-parent family and remained in it for the rest of childhood (14 percent); for these children, the "average" 15-year childhood consisted of almost eight years spent in a two-parent family, followed by seven years in a single-parent family (not shown). A third of the children involved in a marital disruption subsequently returned to a two-parent family (nine percent); the "average" childhood for these young people consisted of a transition from a two-parent to a one-parent family after about six years, a three-year spell in a single-parent family and another six years in a two-parent family as a result of remarriage or reconciliation (not shown). The remainder experienced more frequent transitions between one- and two-parent families, but this group is so small that the PSID sample cannot be used for any further disaggregation.

Table 3. Percentage distribution of children born into a one-parent family, by later family experience, according to race, PSID

Later experience	Total (N=180)	White (N=47)	Black (N=133)
Remained in one-parent family for 15 years	27.9	15.2	50.3
Became part of two-parent family and remained so for rest of childhood	45.6	61.1	18.1
Became part of two parent family but later returned to one-parent family	15.1	11.4	21.6
Experienced several changes in family setup	11.5	12.3	10.0
Total	100.0	100.0	100.0

Higher rates of marital dissolution among black couples accounted for some of the difference in the family situations of black and white children. For example, 52 percent of black children born into a two-parent family later spent time in a one-parent family, whereas less than a quarter of white children went through such a tran-

Table 4. Percentage distribution of children born into a two-parent family that subsequently changed structure, by later family experience, according to race, PSID

Later experience	Total (N=527)	White (N=371)	Black (N=156)
Remained in two-parent family for 15 years	75.6	78.0	48.4
Went from two-parent family to one-parent family and remained there for rest of childhood	13.5	10.3	49.1
Went from two-parent family to one-parent family and then returned to two-parent family during childhood	8.7	9.4	1.0
Experienced more than two such transitions	2.2	2.3	1.5
Total	100.0	100.0	100.0

Table 5. Income-to-needs ratio, average family income (in 1983 dollars) and percentage classified as poor among children who spent time in both a two-parent and a one-parent family, by family situation and race, PSID

Family situation and race	Income/ needs ratio	Mean family income	% poor	N
TWO-PARENT				
All	**2.87**	**28,974**	**8.9**	**198**
White	3.13	31,686	5.1	97
Black	1.94	19,285	22.4	101
ONE-PARENT				
All	**1.88**	**17,994**	**27.0**	**198**
White	2.06	19,459	23.2	97
Black	1.25	12,762	40.3	101

sition. Not only were black children more likely than white children to experience this transition, but those who did were much less likely than white children to return to a two-parent family. As shown in Table 4, very few of the black children who were born into a two-parent family and later found themselves in a one-parent family subsequently lived in another two-parent family. In contrast, over half of the white children who started out in a two-parent family and later were in a one-parent family subsequently returned to a two-parent family. One implication of these findings is that white children are much more likely than black children to spend part of their childhood living with a stepparent.

Parental Absence and Child's Economic Well-Being

There are many reasons to expect that children living in a two-parent family will enjoy a higher living standard than do children in a family headed by a single parent.[7] First, a two-parent family has two potential breadwinners, and child care is less likely to impinge on work schedules. Second, the earned income of women heading one-parent families is likely to be low because of gender-based hourly pay differences. Finally, the amount of money available in the United States through private transfers (e.g., child support) and public ones (e.g., AFDC—Aid to Families with Dependent Children) is fairly small. The total effect of these forces is to produce sharply lower family incomes during the years in which children live in a one-parent family. An analysis of data from the 1983 U.S. Current Population Survey showed that the total household income of a mother-only family averaged only 40 percent of that of a two-parent family.[8]

Table 6. Percentage distribution of years of childhood, and of years of childhood spent in poverty, by family situation and race, PSID

Family situation	% of all years	% of years spent in poverty
Lived with two parents		
White	78.8	35.3
Black	6.4	17.2
Lived with one parent from birth		
White	2.9	10.0
Black	3.5	18.3
Lived with one parent after divorce or separation		
White	6.0	8.9
Black	2.5	10.4
Total	100.0	100.0

However, this simple differential does not take family size or other demographic differences into account. Appropriate adjustments can readily be made with our 15-year sample of children, using as a measure of economic status the ratio of total family income to the U.S. government's annually calculated poverty thresholds for families with different compositions (based on the number, sex and age of family members). The resulting measure is what we will term an income-to-needs ratio.* Families that retained a one-parent or two-parent structure through the entire 15-year period may differ in many ways (for example, in the years of completed schooling or level of occupational attainment of the parent or parents) that would render their economic status unrepresentative of the likely situation of children who experience changes in family structure. Therefore, we have restricted our comparisons to children who lived with both one and two parents during the period. Two-parent income-to-needs ratios have been averaged over the number of years a child spent in a two-parent family; one-parent income-to-needs ratios have been averaged over the number of years spent in a one-parent family.

As can be seen in Table 5, the economic status of these children while they live with one parent is about two-thirds as high as it is when they live with two parents or with stepparents (1.9 compared with 2.9). The economic status of black children is lower than that of white children in each type of family, but the relative advantage of living with two parents is similar for white and black children. The data also reveal the surprising fact that black children living with two parents have a lower standard of living than do white children living with a single parent (income-to-needs ratios of 1.94 and 2.06, respectively). Obviously, something more than differentials in family structure must account for racial differences in economic status.

A life-course view of the economic experiences of the children in the study provides rich information on childhood poverty and its links to family structure. The children's experience of poverty during their first 15 years of life is remarkably similar to their experience in a one-parent family: Roughly one-third of all children were poor in at least one year, the majority of children who ever lived in poverty did so for less than half of their childhood and poverty was much more prevalent among blacks than among whites (not shown).[9]

To understand the nature of the links between poverty and family structure, we divide the children into groups according to whether they lived in a two-parent family, a one-parent family resulting from a birth to an unmarried mother or a one-parent family created through marital disruption, and examine the poverty experience of each (as measured by U.S. government poverty thresholds). Table 6 shows some surprising results: Fifty-two percent of the years of poverty experienced during childhood occurred while children were living in a two-parent family—35 percent among whites and 17 percent among blacks.

Although in the experience of this study population, marital disruption is more frequent than births to unmarried mothers, the former is a considerably less important contributor to childhood poverty. Twenty-eight percent of the years of childhood poverty were related to a nonmarital birth, whereas just 19 percent could be linked to a marital disruption.

Despite the relatively greater importance of births to unmarried mothers in producing childhood poverty, much less is known about the dynamics of income after such births than has been ascertained about income fluctuation following marital disruption. Previous research does, however, point to the importance of distinguishing whether such births occurred among never-married or among previously married mothers. For example, it has been shown that both black and white children born to never-married women can expect to spend much longer portions of their childhood in a single-parent family than can those whose mothers were previously married.[10] In addition, a study of AFDC recipients showed that never-married women could be expected to spend far more time on welfare than could previously married applicants.[11] Finally, both the total income and the earned income of families headed by white never-married women have been shown to be substantially lower than those of families headed by previously married women, a fact that may be attributable, at least in part, to the fact that never-married women who head households are often very young.[12] The incomes of never-married black women who headed families, on the other hand, were indistinguishable from those of black women who had separated from their husbands.

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*Since the federal poverty threshold for a family of four in 1985 dollars was approximately $11,000, a family of four that had a family income of $33,000 would have an income-to-needs ratio measuring 3.0; a family of four that had an income of $5,500 would be considered poor and would have an income-to-needs ratio measuring 0.5.

Table 7. Income-to-needs ratio, family income (in 1981 dollars), and percentage living in poverty among children, women and men in families that experienced marital dissolution, at various points before and after divorce or separation, PSID

Time	Children			Women			Men		
	Family income	Income/needs ratio	% poor	Family income	Income/needs ratio	% poor	Family income	Income/needs ratio	% poor
1 year before dissolution	23,213	2.7	12	26,168	3.6	7	25,403	3.6	6
1 year after dissolution									
All	15,866	2.1	23	17,168	2.7	11	21,488	3.7	4
No remarriage	13,822	1.8	27	14,781	2.6	13	na	na	na
5 years after dissolution									
All	22,380	2.6	17	22,781	3.4	10	25,874	4.2	3
No remarriage	14,511	1.9	20	15,178	2.8	11	na	na	na

Source: Calculated from Duncan and Hoffman (1985), Table 14.A.7, based on data from the Panel Study of Income Dynamics.

Note: na=not available.

Researchers have not, however, tracked through time the economic experiences of children born to never-married and previously married mothers as systematically as they have studied the economic impact of marital disruption on children. By making it possible to compare the economic status of individuals in the years before and after the dissolution of a marriage,* our longitudinal data provide a unique opportunity to look at the impact of divorce and separation on the economic status of women and children. This method gives us direct information on the relative impact of divorce and of separation on the income of children, ex-wives and ex-husbands; in addition, the procedure yields information for ex-wives on the relative importance of alimony and child support, welfare, labor-market activity and remarriage as routes toward possible improvement in their economic status.

The data in Table 7 illustrate the economic impact of divorce or separation by showing income-to-needs ratios in the year before, the year after and five years after a divorce or separation for the children, women and men undergoing those events. The women's and children's family incomes include alimony, child support and welfare income, while the men's has had alimony and child support subtracted.

Family income dropped by about 40 percent for children and women between the year before and the year after marital dissolution but by only 15 percent for men. Since divorce or separation initially reduces the family size of both resulting households, it is not surprising that decreases in the income-to-needs ratio are less severe than the decrease seen in average income. In the wake of divorce, women's living standards fell to about three-quarters of their former level; the average divorced man, on the other hand, was actually slightly better off in the year following his divorce than he was in the year before, and his situation continued to improve with time. In addition, average living standards for women who did not remarry changed little over the five years following the divorce. For example, their income-to-needs ratio was 2.6 one year after the dissolution of their marriage and 2.8 five years after.

Remarriage appears to improve women's average income-to-needs ratio substantially. About half of the women remarried by the fifth year following their divorce or separation, and their economic status usually then became higher than it had been before they divorced (not shown). Combining the remarried and still-divorced into a single group shows that the "average" divorced woman and her children were about as well off after five years as in the year before divorce. But the average is formed by two very disparate groups—those who remarried (the majority of whom are better off) and those who did not (the majority of whom are in a worse position). Thus, divorce creates a great deal of inequality in the postdivorce distribution of income among women and children.

The relative stability of the family income of women who did not remarry masked a number of changes in the composition of their postdivorce income (see Table 8, page 176). The women's own labor-force income was clearly the dominant component of the family's income after divorce. Labor-force participation rates jumped from predivorce levels by 15 percentage points—from 67 to 82 percent (not shown). Women's labor income accounted for only 22 percent of family income before the divorce, 60 percent of total family income in the first year after the divorce and, if the woman had not remarried by five years after the divorce, nearly 70 percent at that time.

Noncoverage by and noncompliance with court awards of child support and alimony are widespread. The U.S. Census Bureau estimates that only about half of female-headed households with minor children had child support awards or agreements in 1985, and only half of those who were due payments received the full amount; one-quarter received nothing at all.[13] The majority of the divorced or separated women in our sample reported that they had received no alimony or child support, and both the incidence and the amount of any transfers declined as time passed following the divorce. Even in the year just after the marital dissolution, when alimony and child support payments were highest, they accounted for only about one-tenth of total average family income; the average amount fell by 59 percent by the fifth year following the dissolution. Over time, the decline in support from ex-husbands was much steeper for women whose family incomes had been high during the marriage. Previous research has shown

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*The analysis presented here draws heavily on G. J. Duncan and S. D. Hoffman (see reference 14), and is based on divorces or separations that occurred in the PSID between 1969 and 1975. Information on income and employment is compiled from one year prior to the calendar year of the divorce to five years afterward for the children, women and men involved. (Note that income level for the year during which the marital dissolution occurred is not examined here, since economic conditions before and after the dissolution within that year cannot be assessed from existing data.) The sample was restricted to men and women between the ages of 25 and 54 in the year prior to the divorce. Since the researchers' interest was in economic consequences, Duncan and Hoffman used a functional rather than a legal definition of marriage and did not distinguish between divorces and separations. A divorce or separation is defined as the transition from living with a spouse or long-term partner to living without that person for reasons other than death. Remarriages are defined analogously.

Table 8. Amount (in 1981 dollars) and percentage distribution of family income among divorced or separated women who did not remarry, at various points before and after dissolution, by source of income, PSID

Source of income	One year before		One year after		Five years after	
	Mean	%	Mean	%	Mean	%
Total	**26,168**	**100**	**14,781**	**100**	**15,178**	**100**
Woman's own labor income	5,829	22	8,937	60	10,541	69
Alimony and child support	13	0	1,646	11	675	4
Welfare	213	0	887	6	733	5
Other	20,113	77	3,311	23	3,229	21

Source: Calculated from reference 14.

that annual support from high-income ex-husbands is more than twice as large as that from low-income husbands in the year following divorce ($2,425 compared with $940),* but that this support falls below the amount paid by low-income husbands ($746 compared with $764) by the fifth year.[14]

Shortly after divorce, welfare was less important than alimony or child support as a source of income, and it remained at a level of about five percent of total average income in the fifth year following divorce. There were substantial racial differences in the relative contribution of each component to the total income (not shown in Table 8); however, while between one-half and four-fifths of black women received welfare in the five years following a divorce or separation, in no year was their average level of public assistance even half as large as their average labor earnings.

Discussion

Thus far, we have marshaled an impressive body of evidence linking the economic well-being of children to their living arrangements. When the child was living with only one parent, the family's living standard was much lower than it was during the periods the child spent with two parents. In addition, the average economic well-being of the women and children increased only with remarriage or reconciliation. Nevertheless, two-thirds of U.S. children spent their entire childhood in a two-parent family, and the economic well-being of these families is clearly influenced by factors other than those we have examined here. These events include, especially, labor-market events such as unemployment and changes in the labor supply.

The most comprehensive attempt to place factors related to the labor market and family structure into a comparable perspective indicates that family structure, while certainly important, cannot account for most of the poverty episodes experienced by children, for most of the racial gap in economic status or for most of the recent trends in the economic status of children.[15] For example, the increasing prevalence of female-headed families has had only a modest effect on the overall poverty rate: In 1983, some 15 percent of households in the United States were poor; if family structure had not changed between 1959 and 1983, the 1983 poverty rate would have fallen to 13.0 percent, a modest 13 percent decrease. Other analyses of transitions into poverty have found that transitions from a two-parent to a one-parent family are less important than various labor-market events in accounting for transitions into poverty.[16] For example, about one out of seven cases in which a child began a long-term period in poverty could be linked to the loss of a parent, while more than half could be linked to changes in the labor-market participation of family members in intact families.[17] In addition, differences in family structure accounted for less than half of the racial differences in economic status. Some studies have used several different sources of data to calculate the extent to which racial differences in family structure can account for racial differences in family income, income-to-needs ratios or poverty rates.[18] Virtually all such studies have found that family structure differences account for less than half of the economic gap, and some estimates of their contribution to poverty are much smaller than that.

These data—indicating the greater importance of labor-market factors as opposed to changes in family structure—may appear to be at odds with the findings that we presented earlier, which showed dramatic differences between the economic status of one-parent and two-parent families. In fact, however, the evidence is consistent. When periods of living with only one parent occur, these periods are typically characterized by a much lower standard of living. However, events in the labor market occur more frequently than do changes in family composition. Labor-related problems, such as low hourly earnings and unemployment, are so widespread among both one-parent and two-parent families that they are more influential than family structure itself in affecting children's economic well-being.

Most research on differences in socioeconomic attainment between children raised in a two-parent and those raised in a one-parent family has shown that the latter children complete significantly less education, earn lower wages and work in less prestigious occupations.[19] In this body of research, a number of different definitions of single-parent background and a variety of data sets have been employed; nevertheless, the detrimental effects of living in a single-parent household have proved to be fairly robust, regardless of differences in definitions and data.

Explaining why such differences exist is more problematic. We have seen that differences in family structure are usually associated with large variations in economic well-being. How does one disentangle the effects of one from the effects of the other? The distinction has obvious policy implications—the "problem" of single-parent families will be viewed very differently if the apparently detrimental effects on children of being raised in a single-parent family are solely a product of such a family's lower income.

There seems to be little doubt that children's schooling and career attainments are systematically related to their parents' income. Even after adjusting for differences in the education and occupational status of parents, a number of recent studies that used several different data sets found significant links between parental income and the completed schooling and earnings of children.[20] These links are hardly surprising: Higher incomes can be spent in ways that enhance the intellectual and social development of children, although they may also merely represent other causal factors (e.g., better schools and neighborhoods) that are linked to children's success.

Few studies of the effects of growing up in a single-parent household have used income measures sufficiently reliable to allow the various effects to be disentangled. When taken together, however, a handful of studies that have included income measures indicate that economic differences account for many of the adverse effects of being raised in a single-parent household.[21] All find that adjustments for parental income reduce the estimated impact on completed schooling of living in a single-parent family by between one-third and two-thirds. More research is clearly needed on this topic, but tentatively one can conclude that much of the single-parent effect on

(Continued on page 178)

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*High income is defined as the upper 50 percent of the income distribution for married couples; low income is defined as the lower 50 percent.

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(Continued from page 176)

schooling seen is really related to income.

Conclusions

Using longitudinal evidence, we have attempted in this article to determine whether single-parent families in the United States, and their economic problems, are transitory or persistent. In evaluating the findings, it is important to note that the trends described at the outset have continued: The proportion of births to unmarried mothers has increased, as have marital dissolution rates. The persistence of these trends indicates that the proportion of childhood spent in a one-parent family by a cohort of children born in the late 1960s is low compared with the likely length of time spent in such a family by children born more recently. One investigator has estimated that only 37 percent of white children and only nine percent of black children born in 1980 will live with both of their natural parents through the first 15 years of their childhood.[22] Moreover, the proportion of the childhood years spent in a one-parent family has also continued to grow: The same researcher estimates that on average, white children born in 1980 will live 31 percent of their first 18 years outside a two-parent home—up from 19 percent for white children born between 1965 and 1969. Among black children, the increase is estimated to be from 44 percent to 59 percent; that is, black children born in 1980 will on average spend more time in a one-parent family than in a two-parent family. These trends lend a sense of urgency to the object of understanding the dynamic nature of family structure and its economic consequences.

The results of our longitudinal analysis, when compared with the more customary indicators of the prevalence of single-parent families and childhood poverty that are drawn from cross-sectional "snapshots," offer both good and bad news. As with most phenomena, simple dichotomies between one-parent and two-parent families and between family incomes above and below the poverty line break down when viewed dynamically. During childhood, many children live in both types of families, and many spend some but not all of their childhood in poverty. The proportion of children who either ever live in a single-parent family or ever experience poverty is much greater than is indicated by single-year snapshots. However, while most of the children who ever live in a single-parent family or below the poverty line do so for a relatively short period, racial differences are striking: Both life in a single-parent family and experience with poverty are much more prevalent and persistent for black children than for whites.

Connections running from family structure to economic well-being are close: Children who experienced both types of families during childhood enjoyed a 50 percent higher living standard when they lived in a two-parent family than they did when they lived in a one-parent household. Introducing policies directed toward transferring more of the absent father's income to his children, increasing benefit levels of public transfer programs and increasing the wage rates of the women who head a single-parent family could all improve the economic well-being of children living in a single-parent family. Given current policies, the economic well-being of mothers and children is strikingly dependent on marriage and remarriage.

The correlation between family structure and economic well-being has fueled another policy debate in the United States: Are programs such as AFDC that generally restrict benefits to female-headed families responsible for the dramatic growth in the number of such families? Critics of the U.S. welfare system argue that by increasing the income available to a single woman with dependent children but not the income available to intact families or to single women without children, AFDC has encouraged out-of-wedlock births, marital instability and the establishment of independent households by unmarried mothers, while discouraging marriage and remarriage.[23] The evidence on this issue, while not definitive, does not appear to point to large or even uniformly significant effects in this direction.[24]

The lower economic status of single-parent families obscures the crucial fact that family structure is less important than other factors in affecting the economic well-being of children. More years of childhood poverty are spent with two parents than with only one parent, and labor-market events appear to bear more responsibility than do family events for transitions into poverty. So, while contemplating policies aimed at improving the economic status of children, we should direct equal attention to labor-market problems and to public transfer programs that affect two-parent families.

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Research Note

The Need and Unmet Need for Infertility Services In the United States

By Stanley K. Henshaw and Margaret Terry Orr

This article estimates the number of women of reproductive age who need infertility services because they want to have children but suffer impairments of their own or their partners' fecundity; it also estimates the number who have obtained such services. The analysis is based on data from the 1982 National Survey of Family Growth (NSFG), which involved a nationally representative sample of 7,969 women aged 15–44 of all marital statuses. Standard errors have been calculated for all estimates presented below, using equations published by the National Center for Health Statistics.[1] T-tests have been used to test the significance of differences in proportions.

Classifications

Figure 1 represents all U.S. women aged 15–44 classified according to their fecundity status. Assignment has been made hierarchically, since some women fall into more than one category. Of the 54.1 million U.S. women of reproductive age, 19.4 million (36 percent) are subfecund or infecund. Nearly three-quarters of this group—13.7 million—are infecund because they or their partners have been surgically sterilized: Ten million have had tubal ligations or vasectomies and 3.7 million have had hysterectomies or ovariectomies. The latter procedures are irreversible, whereas tubal ligations and vasectomies can sometimes be reversed (although at great cost) by means of microsurgery.

Nearly 900,000 of the subfecund or infecund women state that it is impossible for them to have a baby because they are menopausal or because they or their partners have had an accident or an illness; these women are classified as nonsurgically sterile. Another 1.5 million are classified as "perceived subfecund" because they report that they or their partners have some problem related to becoming pregnant. Approximately 2.1 million women are not sterile or subfecund but report that it would be dangerous or difficult for them to carry a pregnancy to term, that it would be dangerous for the baby, or that they have been advised by a doctor not to become pregnant; these women are unable to have a baby but report no problems related to conception per se.

Just over one million women are not surgically sterile and do not report any problems in conceiving or carrying to term, but they do report that during at least the preceding 12 months of continuous marriage or cohabitation, they neither practiced contraception nor became pregnant.* Without further information, we have categorized couples in this "long-interval" group as subfecund/infecund, although some of them may be able to conceive in the future without treatment; indeed, some will conceive without treatment given a longer period of trying to become pregnant. However, we have equated 12 months with a long interval because many couples seek infertility services after a year of trying to become pregnant.

As a result of the underreporting of abortions in the NSFG, the number of women estimated to belong in the long-interval category may be too high.[2] The problem of underreporting is minimal among married white women but is substantial among married black women; however, since married blacks constitute only a small proportion of all subfecund and infecund women, correcting the error would have only a small effect on the estimate for the subfecund/infecund category. (Unmarried noncohabiting women who have not practiced contraception and have not become pregnant are excluded from the long-interval category because of uncertainty about their frequency of intercourse over the 12-month time period.)

All women who are not already classified as subfecund or infecund and who report having had a pregnancy within the three years prior to the interview are classified as fecund. The 10.6 million women (20 percent of all those aged 15–44) who make up this group constitute a minimum estimate because of the underreporting of abortions, particularly among unmarried women. Such underreporting could mean that the number of fecund women should be adjusted upward by as much as 18 percent, to 12.5 million (23 percent). This adjustment has not been made, however, because of uncertainty about the exact correction factor to use and the categories the women should be taken from.

The number of women whose fecundity status is unknown is estimated to be 24.2 million (45 percent of all women aged 15–44). However, this figure is undoubtedly inflated by the underreporting of abortions. Nearly one-half of the "fecundity unknown" group—11.7 million women—are currently using a reversible method of contraception. Another one-fifth—4.9 million women—are classified as not currently practicing contraception; they are not eligible to be put in the long-interval category because their period of contraceptive nonuse is shorter than one year, or because they are neither married nor cohabiting. Finally, nearly one-third of those whose fecundity is not known (7.5 million women) have

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Stanley K. Henshaw is deputy director of research at The Alan Guttmacher Institute (AGI). Margaret Terry Orr, who was principal investigator for the research project upon which this article is based, was senior research associate at the AGI. She is now senior associate with Pickman Consulting Group, a social policy consulting firm in New York. The research project was supported by grant number FPR-000037-01-0 from the Department of Health and Human Services (DHHS). The ideas expressed in this article are the authors' and do not necessarily represent those of the DHHS.

*Among women in this group, the period during which they did not conceive despite unprotected coitus was 12–23 months for 35 percent, 24–35 months for 14 percent, and 36 or more months for 52 percent.

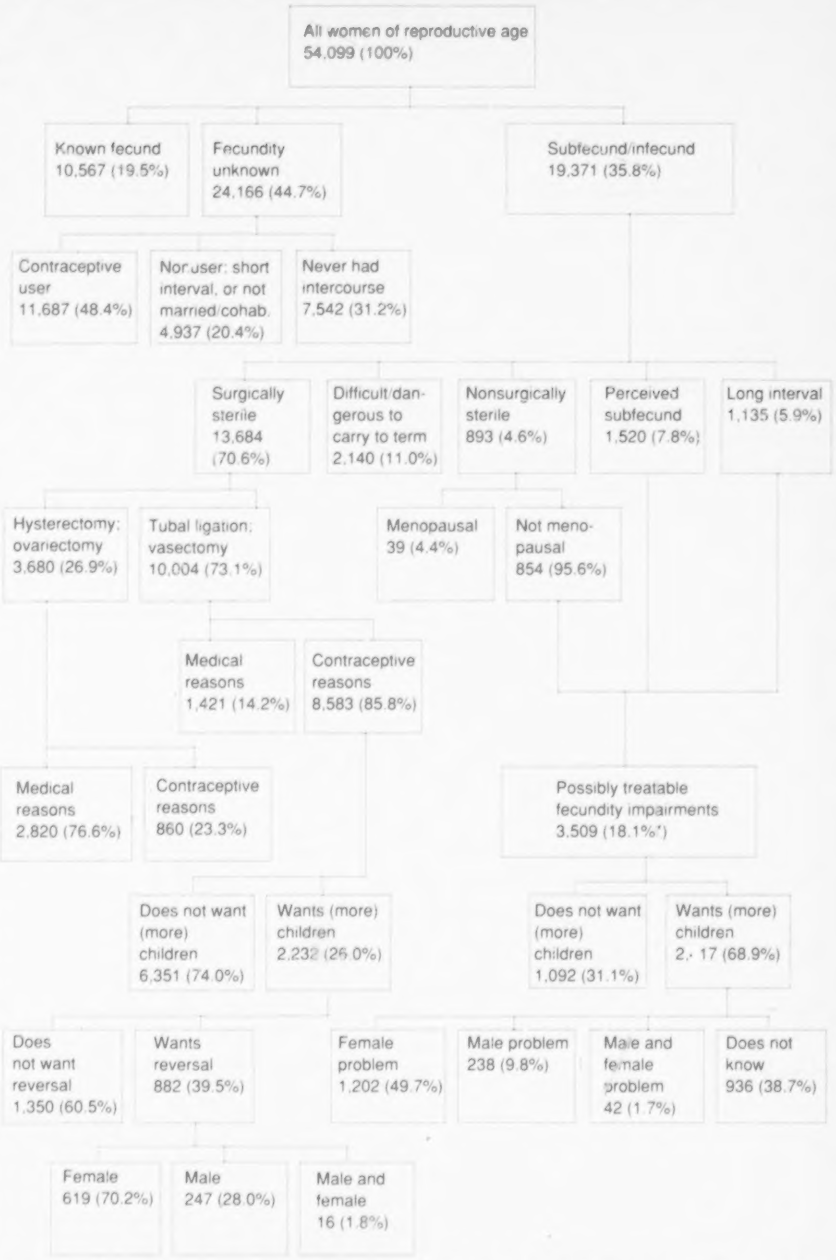
never engaged in sexual intercourse.*

Who Needs Services? Who Gets Them?

In estimating the need for infertility services, we are concerned with three of the categories presented in Figure 1: the nearly 900,000 women who report that they or their partners are nonsurgically sterile; the 1.5 million who perceive themselves or their partners to be subfecund; and the 1.1 million who make up the long-interval group. Except for the small proportion of women who are menopausal, all are considered to have potentially treatable fecundity impairments. (Excluded from the treatable category are couples who have had tubal ligations or vasectomies that they want to have reversed† and those who say it is difficult or dangerous for them to carry a pregnancy to term. The appropriate care for these groups differs from what is usually considered to be infertility treatment.)

In all, an estimated 3.5 million women have fecundity impairments that could possibly be treated. Sixty-nine percent, or 2.4 million, of these women say they would like to have children (or more children) and are therefore defined as needing infertility services. (The proportion who say they want more children is the same among those who believe they are subfecund as among those who are experiencing a long interval without conceiving [71 percent], but it is slightly lower among the nonsurgically sterile [62 percent], who are older, on average, than the other two groups.) The definition of need is thus based entirely on women's reports of their fertility aspirations and of their own and their partners' fecundity status; we assume that these reports accurately reflect their actual physical condition and desire for children. Among those considered to need services are women in the long-interval group, who may not yet suspect a possible infertility problem, and women who are not actively trying to become pregnant. Most such women would not seek infertility care. On the other hand, many women classified as being of unknown fecundity may have infertility problems that will become appar-

Figure 1. Classification of U.S. women aged 15–44, by fecundity status


All women of reproductive age 54,099 (100%)
Known fecund 10,567 (19.5%)
Fecundity unknown 24,166 (44.7%)
Subfecund/infecund 19,371 (35.8%)
Contraceptive user 11,687 (48.4%)
Nonuser: short interval, or not married/cohab. 4,937 (20.4%)
Never had intercourse 7,542 (31.2%)
Surgically sterile 13,684 (70.6%)
Difficult/dangerous to carry to term 2,140 (11.0%)
Nonsurgically sterile 893 (4.6%)
Perceived subfecund 1,520 (7.8%)
Long interval 1,135 (5.9%)
Hysterectomy; ovariectomy 3,680 (26.9%)
Tubal ligation; vasectomy 10,004 (73.1%)
Menopausal 39 (4.4%)
Not menopausal 854 (95.6%)
Medical reasons 1,421 (14.2%)
Contraceptive reasons 8,583 (85.8%)
Medical reasons 2,820 (76.6%)
Contraceptive reasons 860 (23.3%)
Possibly treatable fecundity impairments 3,509 (18.1%*)
Does not want (more) children 6,351 (74.0%)
Wants (more) children 2,232 (26.0%)
Does not want (more) children 1,092 (31.1%)
Wants (more) children 2,417 (68.9%)
Does not want reversal 1,350 (60.5%)
Wants reversal 882 (39.5%)
Female problem 1,202 (49.7%)
Male problem 238 (9.8%)
Male and female problem 42 (1.7%)
Does not know 936 (38.7%)
Female 619 (70.2%)
Male 247 (28.0%)
Male and female 16 (1.8%)

*Percentage shown is of subfecund/infecund women. Note: Numbers are in thousands; except as noted in preceding footnote, percentages (in parentheses) are based on the next higher level subgroup.

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*This category includes women who had coitus before their first menstrual period but not since, and women who are under age 25 and have had coitus only once.

The classification of fecundity status presented in this article differs slightly from that used by the National Center for Health Statistics (NCHS), which conducted the NSFG. (See: W. D. Mosher and W. F. Pratt, "Fecundity and Infertility in the United States, 1965-82," *Advance Data from Vital and Health Statistics*, No. 104, 1985; and reference 2.) The NCHS includes in the subfecund category both women who have difficulty conceiving and those who have difficulty carrying to term; women who say that it would be dangerous for them to carry a pregnancy to term are classified as subfecund only if they also say either that they would have an abortion to terminate a pregnancy or that they are planning to be sterilized to prevent pregnancy. In contrast, this article classifies all women who say pregnancy would be dangerous as subfecund, without any qualifications; and it distinguishes the "difficult/dangerous to carry to term" category from the "perceived subfecund" group. In addition, the NCHS considers to be fecund those women who are classified in this analysis as being of unknown fecundity. Finally, the present analysis uses a 12-month rather than a 36-month interval of unprotected intercourse within marriage or cohabitation to define "long-interval" subfecundity. The differences in definition stem in part from differences in focus: The primary concern of this article is the need for infertility services, whereas the focus of the NSFG reports is the demographic impact of impaired fecundity.

†Some 882,000 couples want a reversal of a previously obtained tubal ligation or vasectomy. (See: S. K. Henshaw and S. Singh, "Sterilization Regret Among U.S. Couples," *Family Planning Perspectives*, **18**:238, 1986.)

Table 1. Number of U.S. women who have possibly treatable infertility problems and want to have (more) children, and number and percentage distribution, by person needing treatment and type of infertility services received; according to subfecundity category

Characteristic	Treatable infertile		Nonsurgically sterile†		Perceived subfecund		Long interval	
	No. (000s)	%	No. (000s)	%	No. (000s)	%	No. (000s)	%
Want (more) children	**2,417**	**100**	**530**	**100**	**1,082**	**100**	**806**	**100**
Person needing treatment								
Female only	1,202	50	263	50	939	87	0	0
Male only	238	10	164	31	74‡	7‡	0	0
Both	42‡	2‡	10‡	2‡	31‡	3‡	0	0
Not known/not asked	936	39	92‡	17‡	38‡	4‡	806	100
Services received								
Advice	387	16	143‡	27‡	188‡	17‡	56‡	7‡
Treatment	787	33	219‡	41	401	37	168‡	21‡
None	1,242	51	168‡	32	493	46	581	72

†Excludes those who are menopausal. ‡Relative standard error >30 percent.

ent in the future. However, the need estimate we present here applies to one point in time; it does not indicate the number of new cases that occur each year or the number of women who seek treatment in a year. Finally, we must note that even with treatment, not all of the women defined as needing infertility services will ultimately succeed in having a child; nevertheless, it is reasonable for them to seek medical help for their infertility problem.

As Table 1 shows, a large share of the estimated need appears to be for services for women. For half the couples in need, it is the woman who is thought to have the fecundity impairment; in only 10 percent of couples is the male partner described as having the problem. However, whereas 31 percent of nonsurgically sterile women attribute the fecundity problem to their male partners, only seven percent in the "perceived subfecund" group do so. This difference may reflect more certainty about the cause of the problem among women who report themselves or their partners to be nonsurgically sterile. For 39 percent of those with potentially treatable impairments, there is no indication of which partner needs treatment; most of the 39 percent are in the long-interval group.

Forty-nine percent of couples in need of infertility care have received medical attention: Thirty-three percent have received treatment and 16 percent have been given advice only. Sixty-eight percent of those who say they are nonsurgically sterile have received services, as have 54 percent of the "perceived subfecund" group. Among women in the long-interval category, 28 percent have received medical attention for infertility, although by definition women in that category have not reported any infertility problem. For all the categories, however, the timing of such medical attention in relation to the onset of the current fecundity problem is unknown. Thus, it is possible that women in the long-interval group who report seeing a doctor may have done so years earlier, and may have been treated successfully (indeed, about 70 percent of the women with long intervals have had children).

Table 2 illustrates the demographic characteristics of the women estimated to be in need of infertility services. As the table shows, 54 percent are in their 20s and 36 percent are aged 30–39. Relatively few are teenagers or women 40 and older (five percent each). Eleven percent are black and 12 percent are Hispanic. The large majority (75 percent) are currently married, and a smaller majority (59 percent) have had no children. Just over 80 percent live in metropolitan areas. Regional differences reflect the population distribution of the country, with the largest proportion of those in need (32 percent) residing in the South and the smallest proportion (18 percent) residing in the Northeast.

Although 15 percent of women who need infertility care have family incomes below 150 percent of the federally defined poverty level,* only four percent are Medicaid recipients. One reason is that the Medicaid program was designed primarily to serve dependent children and their mothers and consequently covers relatively few childless women of childbearing age. It is possible that the NSFG underestimates the number of women with Medicaid coverage by about one-fifth.† But even if the proportion of Medicaid recipients among those in need is actually about five percent, the fact that Medicaid reimbursement is available for no more than one-third of poor women in need has important implications for the access of low-income women to infertility services.

The 2.4 million women in need of infertility care represent five percent of all U.S. women of reproductive age. The proportion varies somewhat by demographic characteristics, as is shown in the table. Women aged 20–34, and particularly those aged 25–29, are more likely than women in other age-groups to need services. Need is also relatively higher among those who are currently married and those who have had no births. It appears to be less prevalent among poor women than among women of higher income, regardless of age. One reason is that poor women are more likely to be unmarried, and unmarried women are about one-third as likely as married women to be in need of services. Race, Hispanic ethnicity, metropolitan status and region have no statistically significant relation to the probability of being in need.

As noted previously, 49 percent of those in need of infertility care have already received some professional attention. Again, the proportion differs according to demographic characteristics. As might be expected, age is a strong predictor of which women will have obtained services: Only 10 percent of women aged 15–19 in need and 29 percent of those 20–24, as compared with 70 percent of women 40 and older, have consulted a professional about their infertility problem. Similarly, married women are more likely than unmarried women to have obtained services.

Among those in need, black women are less likely than nonblacks to have obtained services, and low-income women are less likely than higher income women to have done so. In the latter analysis, the difference between the income subgroups remains large even when age is controlled for, although the differential is no longer statistically significant because of the small number of respondents in the subgroups. Medicaid recipients appear to be less likely than other women to have obtained services, although the sample sizes are again too small to show statistical significance. Med-

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*In 1985, the federally defined poverty-level income was $10,989 for a family of four.

†According to estimates from the 1984 Current Population Survey (CPS), the number of women covered by Medicaid is about five million. (See: R. B. Gold and A. M. Kenney, "Paying for Maternity Care," *Family Planning Perspectives*, **17**:105, 1985, Table 1.) This figure compares with an estimate of about four million derived from the NSFG. The CPS estimate may include women who are eligible for Medicaid but have not actually received Medicaid-covered services.

Table 2. Number of U.S. women of reproductive age; number and percentage in need of infertility services;† and among those in need, percentage who have obtained services and number and percentage distribution of women who have not obtained services; by selected characteristics

Characteristic	No. of women 15–44 (000s)	In need of infertility services					
		% of women 15–44	No. (000s)	% distribution	% who have obtained services	Have not obtained services	
						No. (000s)	% distribution
Total	**54,099**	**4.5**	**2,417**	**100**	**49**	**1,242**	**100**
Age							
15–19	9,521	1.2*,‡	115‡	5‡	10*,‡	103‡	8‡
20–24	10,629	5.3	564	23	29‡	398	32
25–29	10,263	7.3	751	31	48	392	32
30–34	9,381	5.6	529	22	69	167‡	13‡
35–39	7,893	4.3	337	14‡	57	145‡	12‡
40–44	6,412	1.9‡	120‡	5‡	70	36‡	3‡
Race/ethnicity							
Black	6,965	3.8	268	11‡	30*	187‡	15
Nonblack	47,114	4.6	2,149	89	51	1,056	85
Hispanic	4,393	6.4	282	12‡	39‡	172‡	14‡
Non-Hispanic	49,706	4.3	2,134	88	50	1,070	86
Marital status							
Married	28,231	6.4*	1,803	75	57*	776	62
Unmarried	25,868	2.4	614	25	24	466	38
No. of births							
0	22,941	6.2*	1,422	59	54	647	52
≥1	31,158	3.2	995	41	40	595	48
Metropolitan status							
Metro	43,199	4.6	1,982	82	46	1,065	86
Nonmetro	10,900	4.0	435	18‡	59	177‡	14‡
Region							
Northeast	11,852	3.7	440	18‡	39	266	21‡
North Central	13,981	5.0	694	29	50	346	28
South	17,308	4.4	765	32	54	348	28
West	10,958	4.7	519	21	46	282	23‡
Income level, by age							
<150% of poverty	13,843	2.7*	374	15‡	26*,‡	277	22
≥150% of poverty	40,256	5.1	2,043	85	53	965	78
<30, <150%	9,503	3.1*	291	12‡	26‡	217‡	17‡
<30, ≥150%	20,910	5.5	1,140	47	41	677	55
≥30, <150%	4,340	1.9‡	83	3‡	27‡	60‡	5‡
≥30, ≥150%	19,346	4.7	903	37	68	288	23‡
Medicaid status							
On Medicaid	3,964	2.5‡	101‡	4‡	25‡	75‡	6‡
Not on Medicaid	50,135	4.6	2,316	96	50	1,167	94

*Difference between subgroups statistically significant ($p<0.05$). In the analysis by age, at least one of the differences is statistically significant. In the analysis of income level by age, difference between the first two subgroups is statistically significant.

†Those who have a possibly treatable fecundity impairment (other than surgical sterilization) and who want more children.

‡Relative standard error >30 percent.

icaid has not been successful in eliminating the income differential in access to services because a majority of the low-income women who need infertility care are ineligible for Medicaid, and even those who are Medicaid-eligible are less likely than higher income women to obtain services. There are no significant differences by Hispanic ethnicity, parity, metropolitan status or region in the proportions who have obtained care.

The 51 percent of those in need who have not obtained professional care number some 1.2 million women. This unmet need is concentrated among younger women: Seventy-two percent of those who have not obtained services are under age 30. Blacks and Hispanics each constitute about 15 percent of the unmet-need group, as do nonmetropolitan women. Twenty-two percent are poor, with incomes under 150 percent of the poverty level; six percent are Medicaid recipients.

(Continued on page 186)

Books in Review

Family Planning in the Trenches

The Regulation of Sexuality: Experiences of Family Planning Workers
by Carole Joffe, Temple University Press, Philadelphia, 1986, $24.95, 206 pp.

Reviewed by Susan Newcomer

The title of this book is a little misleading. The casual shelf browser or the reader of new book listings passing this title could miss a very interesting and provocative work. It deals with the interrelationships between sexuality, reproductive rights and reproductive health. Far from being a study of policy or of rules and regulations, the book concerns what the author terms the "bureaucratization of sexuality." Specifically, Carol Joffe, a professor of social work at Bryn Mawr College, observes that women now visit "publicly supported agencies whose purpose it is to help people manage their sexual lives. . . . In short, matters once discussed with one's intimates—and often not even with them—are now routinely discussed with strangers in a bureaucratic setting" [p. 4].

Joffe uses her study of women who work as birth control or abortion counselors to illustrate the contradictions inherent in the American reproductive health care delivery system and to study the influence on that system of three groups with a strong interest in the area of family planning—the family planning establishment, the feminist movement and the "profamily" movement. She argues that the need to bureaucratize may reflect our society's ambivalence about sexuality. For example, the choice of the term "family planning" to describe birth control services suggests a desire to make the whole process asexual. Certainly, the literal planning of a family is far from the minds of many people who attend family planning clinics.

The eastern seaboard clinic in which Joffe did most of her fieldwork and interviewing offered both birth control and abortion services. One group of workers conducted birth control discussion groups and the intake interviews that are routinely carried out before a patient sees a medical worker for contraceptives. A second group counseled abortion patients before, during and after the procedure. For one year, Joffe spent two days a week observing all activities at the clinic, and she interviewed each of the 12 counselors many times. She also attended training sessions and interviewed personnel and training staff at other clinics; as a result, the book is built around the views of over 70 people. The fieldwork was done in 1977 and 1978, in the early days of the profamily movement; Joffe comments that because of the lack of hardened opposition to family planning by such groups at that time, it may have been easier for the workers to reflect on the "general difficulties involved in regulating the sexuality of others" [p. 51]. With the increase in the 1980s of picketing and other expressions of opposition to the provision of family planning and abortion services, family planning workers may have felt it necessary to "close ranks."

Joffe defines the family planning establishment as "a collection of public and private institutions that have been and still are crucial in the establishment and provision of family planning services in the United States" [p. 16]. It is also the employer of the counselors. As such, the establishment sets their work rules and defines the sensibility that informs that work. As with all businesses, the need to balance the quality against the quantity of services is reflected in the type of counseling that these family planning workers provide to patients who come for a contraceptive method or for an abortion.

The workers perceive the use of birth control as both a social and a medical activity, and believe that individuals must understand something about their sexual and social selves if they are to use contraceptives more effectively. Achieving this sort of understanding often is seen by the birth control workers as the object of counseling. Thus, they believe that they are to provide a bridge to connect the patients' concerns over their sexuality with their reproductive health needs.

Yet the agency's administrators may see counseling as expensive, time-consuming and likely to open a Pandora's box of needs within the patient population. For example, one supervisor said that as the clinic hired more counselors with mental health backgrounds or with skills in dealing with sexual dysfunction, these types of workers wanted to spend more time with the patients. This trend added to the cost of providing services, although it also broadened the image of the agency in the community. Such differences in approach have the potential to cause all kinds of administrative stress.

The feminist movement has also been important in the development of family planning services, although Joffe points out that feminists have often taken the role of gadfly. Feminists have generally supported birth control as essential to women's liberation, while they have protested strongly over the medicalization of contraception and the slow development of new contraceptive methods. The family planning workers who were interviewed felt these concerns as well.

A third influence on the workers has been the profamily movement in all its guises, and the book provides an excellent short history of the growth of that political force. The author notes that in the eyes of the conservatives who make up this movement, "state expansion and intervention, always viewed with suspicion, are nowhere more inappropriate than in the family, the most sacredly private of social insti-

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tutions" [p. 44]. Joffe sees this attitude as an expression of the need for society to control sexuality, especially the sexuality of young people and of women. One counselor reported that she believed the agency had received "so much flak from certain sectors of the community for giving birth control and abortions" that they had to "show people we are not dispensing these things casually" [p. 79].

In sum, family planning is seen by the establishment as a medical service, by feminists as a political matter and by the profamily movement as a moral matter. What Joffe does in her book is to examine the ways in which family planning workers integrate all of these influences into the provision of services—which they also see as a sexual matter.

The dynamics of clinic operations and interpersonal relations described in *The Regulation of Sexuality* will make interesting reading, not just for students of organizational bureaucracy and of medical sociology but for anyone who has actually worked in a family planning clinic. The coping strategies used by counselors and other workers to ease the stress of their high-intensity, low-paying jobs may be helpful to others in similar situations. A particularly interesting coping mechanism is the "pronatalism" of the staff: Staff members who become pregnant receive special attention, even baby showers. It is as though the clinic workers are relieved at being around a pregnant woman who actually wants her pregnancy. Anecdotal evidence suggests that this is not unusual in family planning clinics, representing a decided contrast to the "antinatalist" tag that some attempt to pin on the employees of such facilities.

But for me, the most fascinating theme in this book is the continuing dialectic between dealing with sexuality and dealing with reproduction. In many people, the emotional connections between having sex and becoming or making someone pregnant are not very strong. Until recently, family planning providers have promulgated a "sqeaky clean" image of reproductive health. The greatest challenge in this area is to somehow connect the physical exchange of genetic material (i.e., intercourse) with the often messy, sometimes spontaneous, always intimate activity called making love so that unintended pregnancies do not result.

It is not always easy. A common concept in the family planning community is one that Joffe characterizes as the theory of "inoculation" against pregnancy. The idea is that if women are provided with contraceptives at a single visit, they will become immune from having an unintended pregnany in the future. However, Joffe reports that such a model does not accord with the experiences of counselors, who must deal with patients' often ambivalent ideas about their sexuality. In many cases, knowledge about contraceptives, even the provision of contraceptives, is not enough to guarantee their use.

Counselors are taught that it is not correct for them to be judgmental about individuals' decisions regarding contraceptive use. However, despite this official "ideology of tolerance," birth control counselors really do believe that people should use contraceptives. One worker said, "I can't stand irresponsibility about [contraceptive use]. It's like being loose about life and death" [p. 67].

Even though there is official support for nondirective counseling, such an approach may in fact confuse clients who come looking for answers to their birth control concerns. A recent article in the *American Journal of Public Health* indicates that teenagers want to be told what contraceptive method to use, and dislike nondirective counseling.[1]

In addition to concerns over the types of counseling that are offered, some counselors report feeling ambivalent about very young teenagers' having sex. They believe that some adolescents are being pressured into engaging in intercourse by an older partner or by their own expectations about what it means to be an adult. Other family planning workers feel that simply coming to the clinic itself is a mark of maturity; hence, the young client can be treated as a competent, mature adult. Yet the job of the workers is to assist patients in the selection of a contraceptive method rather than to talk to them about their sexuality. The staff struggle with their feelings about teenagers and about their sense of responsibility for them. Some staff members said that no one cared about the young women as children in a family: "This agency is antisex and antifamily . . . just a medical facility"; "I feel scared for the kids, . . . maternal, . . . overwhelmed, . . . a little jealous, they're so free" [p. 80, p. 84].

The counselors have come to regard the use of birth control as a social activity as well as a medical one. They feel frustrated at how little time they have to spend with each patient in the clinic setting. The ways they find to resolve this dilemma are probably similar to those devised by any workers who feel that their jobs and their job descriptions do not mesh. My opinion is that, rather than a simple lack of fit between what their job is and what they perceive the patients want, or a need for better training of counselors, the problem stems from the determined neutrality with which counselors are required to provide information and devices that are intended to be used in the most sexually charged, nonneutral of situations.

Some of the same strains are felt by the abortion counselors. At the time of the interviews, abortion counseling was still a new field. That it existed at all, Joffe contends, is due in part to feminist concerns about the decisions involved in abortion and in part to the support networks that were set up when abortion was legal in only a few states. The chief problem these workers report is to "avoid being overwhelmed by this work and to continue to 'be there' for the clients" [p. 92].

The official view, supported by all of the clinic counselors, is that "you don't give an abortion to someone who does not want one" [p. 92]. Yet the counselors say that at times they have believed that some patients had come to the clinic under pressure from others. However, Joffe notes that being in the abortion clinic under pressure doesn't necessarily mean having an abortion under pressure; although it is correct for a woman to involve others in her decision-making as she sees fit, it remains her decision in the end. The conflict about who makes the abortion decision becomes most intense when the parents of a pregnant teenager think she should have an abortion, but the girl herself wants to have the child. According to Joffe, clinic staff have no clear-cut solutions to such conflicts. Several patterns of involvement have resulted, from having the parent in the room during counseling so the young woman could "hear that no way is her mother going to care for a new baby" [p. 103] to providing separate counseling for others who are involved in the abortion decision.

The abortion counselors also feel strongly that women need more information and counseling when they undergo an abortion. They believe that women who are returning for second or higher order abortions need assistance in self-assertion as well as information about sexuality, to help them stop using abortion as a method of birth control.

In this review, I have chosen to focus on one of several themes in this book—specifically, the style in which birth control services are delivered in clinic settings. But Joffe also looks at relationships among administrators, nonmedical personnel and medical workers, and reports on the strategies to which people resort in order to keep

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their essentially repetitive tasks interesting. She describes the concerns of family planning workers about when (although not whether) to encourage clients—adults as well as teenagers—to abstain from sex, and makes it very clear that clinics which provide birth control and abortion are in no sense "sex clinics." She also explores in depth the workers' concerns about teenagers and their special needs.

It is true, however, that the book deals with what was happening in clinics 10 years ago, and while the optimists may say that things have improved since then, others may disagree. In this era of AIDS, when the need for broad-based education about what is safer sex becomes more urgent, it seems important for those of us in the field of family planning to heed the advice of Carole Joffe and brace ourselves to start talking to our clients about sexuality. As Joffe says, "The old understandings about sexuality [that it is only for married couples wishing to have children] are breaking down" [p. 164]. Yet new understandings have been slow in developing. In this "sexual confusion," Joffe contends, the "most coherent sexual platform" is that of the New Right, but it is "too repressive, punitive and sexist" for most Americans. She argues that a "moral vision without moralism is the only viable foundation for the humane regulation of sexuality" [p. 166].

Reference

1. C. A. Nathanson and M. H. Becker, "The Influence of Client-Provider Relationships on Teenage Women's Subsequent Use of Contraception," *American Journal of Public Health*, **75**:33, 1985.

(Continued from page 183)

In defining unmet need, we should add to the group of women who need infertility services but have not obtained them those who have received some care but who would benefit from further professional attention. The number of such women is unknown, however.

As the table below shows, a large majority of those who received infertility services during 1979–1982 obtained that care from private physicians:

Most recent source of care	%
Private physician	67.0
Private medical group	12.2
Hospital clinic	12.1
Community health center/clinic	3.7
Military clinic	2.3
Family planning clinic	2.1
Public health clinic	0.6
Total	100.0

After private physicians and medical groups, which were the most recent sources of care for 79 percent of NSFG respondents who obtained services, hospital clinics were the most frequent source, serving 12 percent. Only a small proportion of women evidently utilized specialized infertility centers, since hospital clinics and private medical groups—the categories that would include infertility centers—together served no more than 24 percent of infertility patients. Family planning clinics provided services to just two percent of respondents. However, since these figures indicate only the most recent source of care (which in many cases was the final source), they may understate the importance of family planning and other nonhospital clinics in providing initial evaluation, counseling and referral for couples with concerns about their fertility.

Demographers and medical specialists have suggested that the need for infertility services will expand in the coming years for several reasons:[3] The number of people of reproductive age will continue to grow, and the number with impaired fecundity will therefore rise. More women are postponing childbearing to their 30s, thus delaying their discovery of fertility problems as well as prolonging the period during which they are exposed to the risk of disease and other factors that might impair their fecundity. In addition, medical advances in the diagnosis and treatment of fertility problems are increasing the number of infertile women whose conditions can be treated.

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The use of OCs is associated with increased risk of several serious conditions including thromboembolism, stroke, myocardial infarction, liver tumor, gall bladder disease, visual disturbances, fetal abnormalities, and hypertension. Practitioners prescribing OCs should be familiar with the following information relating to these risks.

1. *Thromboembolic Disorders and Other Vascular Problems* An increased risk of thromboembolic and thrombotic disease associated with OC use is established. One study demonstrated an increased relative risk for fatal venous thromboembolism and several studies demonstrated it for non-fatal venous thromboembolism. They estimate that OC users are 4-11 times more likely than nonusers to develop these diseases without evident cause. One British study reported an excess death rate of 40% in OC users, most of which resulted from cardiovascular disease. Another British study showed a lower death rate in OC users than controls; an increase in cardiovascular deaths was seen but was not statistically significant. A U.S. prospective study failed to disclose increased mortality rates from cardiovascular disorders, but a subset analyzed as a retrospective case-control study showed significant increases in venous thromboembolism. CEREBROVASCULAR DISORDERS Two American studies demonstrated an increased relative risk for stroke not shown in prior British studies. In an American study of cerebrovascular disorders in women with and without predisposing causes, relative risk of hemorrhagic stroke was estimated as 2.0 times greater and thrombotic stroke as 4-9.5 times greater in users than nonusers. A British long-term follow-up study reported in 1976 a highly significant association between OC use and stroke. Another study had suggested an association in 1974, but the number of cases was too small to estimate the risk. Subarachnoid hemorrhage has been shown to be increased by OC use in British and American studies. Smoking alone increases incidence of these accidents; smoking and pill use appear to increase risk more than either alone.

MYOCARDIAL INFARCTION (MI) Increased relative risk of MI associated with OC use has been reported. One British study found that the greater the number of underlying risk factors for coronary artery disease (cigarette smoking, hypertension, hypercholesterolemia, obesity, diabetes, history of preeclamptic toxemia) the higher the risk of developing MI, regardless of OC use. OCs were an additional risk factor. In terms of relative risk, it has been estimated that nonsmoking OC users (smoking is considered a major predisposing condition to MI) are twice as likely to have a fatal MI as nonsmoking nonusers. OC users who are smokers have a 5-fold increased risk of fatal infarction compared to nonsmoking users, and a 10-12-fold increased risk compared to nonsmoking nonusers. The number of cigarettes smoked is important. In determining the importance of these relative risks, baseline rates for various age groups must be considered. (Estimates are based on British vital statistics which show acute MI death rates 2-3 times less than in the U.S., so U.S. death rates could be higher.) Importance of other predisposing conditions in determining relative and absolute risks has not been quantified; other synergistic actions may exist. RISK OF DOSE Using data from several national adverse reaction reporting systems, British investigators concluded that risk of thromboembolism, including coronary thrombosis, is directly related to estrogen dose in OCs. OCs with 0.1 mg or more of estrogen were associated with a higher risk of thromboembolism than those containing 0.05-0.08 mg but quantity of estrogen may not be the sole factor. This was supported by a U.S. study. A British study found a positive association between dose of progestogen or estrogen and certain thromboembolic conditions. Swedish authorities noted decreased reporting of thromboembolic episodes when higher estrogen preparations were no longer prescribed. Careful epidemiological studies to determine degree of thromboembolic disease risk associated with progestogen-only OCs have not been done. Thromboembolic disease has been reported in women using these products, and they should not be considered free of excess risk. PERSISTENCE OF RISK Two studies have suggested an increased risk may persist for 6 years after discontinuation of OC use for cerebrovascular disease and 9 years for MI; another study suggested the persistence of risk for subarachnoid hemorrhage. ESTIMATE OF EXCESS MORTALITY FROM CIRCULATORY DISEASES A large British prospective study estimated mortality rate per 100,000 women per year from circulatory system diseases for OC users and nonusers according to age, smoking habits, and duration of use. The overall annual excess death rate for OC users was estimated to be 20/100,000 (ages 15-34 – 5/100,000; ages 35-44 – 33/100,000; ages 45-49 – 140/100,000). Risk is concentrated in long-term users and in smokers, and may persist after OC discontinuation. Although the study showed a 10-fold increase in death due to circulatory diseases in users for 5 or more years, all occurred in women 35 or older. An update provided the following rates: ages 15-34 – 1:6700 for nonsmokers and 1:2000 for smokers; ages 45 and over – 1:2500 for nonsmokers and 1:500 for smokers. Risk appeared to increase with parity but not with duration of use. Until more women under 35 with continuous use for 5 or more years are available, it is not possible to assess relative risk for this age group. Data from a variety of sources have been analyzed to estimate the risk of death associated with various methods of contraception. Estimates include combined risk of the contraceptive method (e.g., thromboembolic and thrombotic disease for OCs) plus risk attributable to pregnancy or abortion if the method fails (which varies with the effectiveness of the contraceptive method). The study concluded that mortality associated with all contraceptive methods is below that of childbirth except for OCs in women over 40 who smoke. (Rates given for pill-only smokers for each age are for smokers as a class. For "heavy" smokers (more than 15 cigarettes a day), the rates would be about double; for "light" smokers (less than 15), about half.) The lowest mortality is with the condom or diaphragm backed up by early abortion. The study also concluded that OC users who smoke, especially over 30, have greater mortality risk than OC users who do not smoke.

Risk of thromboembolic and thrombotic disease associated with OCs increases with age after 30 and for MI is further increased by hypertension, hyperlipidemias, obesity, diabetes, or history of preeclamptic toxemia, and especially by smoking. The following chart gives a gross estimate of risk of death from circulatory disorders associated with OC use.

SMOKING HABITS AND OTHER PREDISPOSING CONDITIONS—RISK ASSOCIATED WITH USE OF OCs

Age	Below 30	30-39	40+
Heavy smokers	C	B	A
Light smokers	D	C	B
Nonsmokers (no predisposing conditions)	D	C,D	C
Nonsmokers (other predisposing conditions)	C	C,B	B,A

A—Use associated with very high risk
B—Use associated with high risk
C—Use associated with moderate risk
D—Use associated with low risk

Physician and patient should be alert to earliest manifestations of thromboembolic and thrombotic disorders (e.g., thrombophlebitis, pulmonary embolism, cerebrovascular insufficiency, coronary occlusion, retinal thrombosis, and mesenteric thrombosis). Should any of these occur or be suspected, discontinue OC immediately. A 4-6 fold increased risk of post-surgery thromboembolic complications has been reported in OC users. If feasible, discontinue OCs at least 4 weeks before surgery associated with increased risk of thromboembolism or prolonged immobilization. Before resuming OC after major surgery or bedrest, balance risks of post-surgery thromboembolic complications with contraceptive needs. Data suggest varicose veins substantially increase risk of superficial venous thrombosis of the leg, the risk depending on the severity of the varicosities. 2. *Ocular Lesions* Neuro-ocular lesions such as optic neuritis or retinal thrombosis have been associated with OC use. Discontinue OC if there is unexplained, sudden or gradual, partial or complete loss of vision; onset of proptosis or diplopia; papilledema; or retinal vascular lesions, and institute appropriate diagnostic and therapeutic measures. 3. *Carcinoma* Long-term continuous administration of natural or synthetic estrogen in certain animals increases certain tumors, benign or malignant, such as breast, cervix, vagina, uterus, ovary, pituitary and liver. Certain synthetic progestogens, none currently in OCs, increase the incidence of mammary nodules, benign and malignant, in dogs. Several retrospective case-control studies reported an increased relative risk (3.1-13.9 times) associating endometrial carcinoma with the prolonged use of estrogens in postmenopausal women. One publication reported the first 30 cases submitted to the registry of cases of adenocarcinoma of the endometrium in women under 40 on OCs. Of the adenocarcinomas found in women without predisposing risk factors for adenocarcinoma of the endometrium (e.g., irregular bleeding when OCs were first given, polycystic ovaries), nearly all occurred in women who had used sequential OCs, which are no longer marketed. No statistical association has been reported suggesting an increased risk of endometrial cancer in users of conventional combination or progestogen-only OCs, although individual cases have been reported. Studies have shown no increased risk of breast cancer to OC or estrogen users. One study found no overall increased risk of breast cancer in OC users but a greater risk was suggested for OC users with documented benign breast disease and for long-term (2-4 years) users. Another study found a history of breast cancer among grandmothers or aunts was significantly more frequent among breast cancer patients who had used an OC continuously for one or more years than among nonusers with breast cancer. One other study indicated an increasing risk of breast cancer in women taking menopausal estrogens, which increased with duration of follow-up. One author suggests that extended (over 6 years) OC use prior to first full term pregnancy was associated with a significant relative risk of breast cancer. A reduced occurrence of benign breast tumors in OC users has been well documented. One study reported malignant melanoma more frequently in OC users than controls and suggests an increased incidence of urinary tract and thyroid cancers. A prospective study of women with cervical dysplasia found an increase in severity and conversion to cancer *in situ* in OC users compared to nonusers. This became statistically significant after 3-4 years of use. Nonreversal of dysplasia within the first 6 months of pill use was suggested to predict progression after prolonged exposure. One study disclosed an increased risk of cancer of the cervix (largely carcinoma *in situ*) in OC users under 40, particularly those who had used OCs over 4 years. There have been other reports of microglandular hyperplasia of the cervix in OC users. One study reported an association between OC use and endocervical adenocarcinoma. In summary, there is no confirmed evidence from human studies of increased risk of cancer associated with OCs. Close clinical surveillance of all OC users is, nevertheless, essential. In all cases of undiagnosed persistent or recurrent abnormal vaginal bleeding, take appropriate diagnostic measures to rule out malignancy. Monitor OC users with a strong family history of breast cancer or who have breast nodules, fibrocystic disease or abnormal mammograms with particular care. 4. *Liver Tumors* Sudden severe abdominal pain or shock may be due to rupture and hemorrhage of a liver tumor. There have been reports associating benign or malignant liver tumors with short-term and long-term OC use. One study reported use of OCs with high hormonal potency and age over 30 may further increase risk of hepatocellular adenoma. Two studies relate risk with duration of use, risk being much greater after 4 or more years of use. Long-term OC users have an estimated annual incidence of hepatocellular adenoma of 3-4/100,000. Although an uncommon lesion, it should be considered in women presenting with an "acute abdomen." The tumor may cause serious or fatal hemorrhage. Patients with liver tumors have demonstrated variable clinical features which may make preoperative diagnosis difficult. Some cases presented because of right upper quadrant masses, while most had signs and symptoms of acute intraperitoneal hemorrhage. Routine radiological and laboratory studies may not be helpful. Liver scans may show a focal defect. Hepatic arteriography may be useful in diagnosing primary liver neoplasm. 5. *Use in or Immediately Preceding Pregnancy, Birth Defects in Offspring, and Malignancy in Female Offspring* Use of female sex hormones—estrogenic and progestational agents—during early pregnancy may seriously damage the offspring. Females exposed *in utero* to diethylstilbestrol, a nonsteroidal estrogen, have an increased risk of developing in later life a form of vaginal or cervical cancer that is ordinarily extremely rare. This risk has been estimated to be of the order of 1:1000 exposures or less. Although there is no evidence that OCs further enhance the risk of developing this type of malignancy, such OC users should be monitored with particular care. A high percentage of women exposed to diethylstilbestrol (30-90%) have epithelial changes of the vagina and cervix. Although these changes are histologically benign, it is not known whether they are a precursor of vaginal malignancy. Male children so exposed may develop urogenital tract abnormalities. Although similar data are not available on other estrogens, it cannot be presumed that they would not induce similar changes. Increased risk of congenital anomalies, including heart and limb defects, has been reported following use of sex hormones, including OCs, in pregnancy. One case-control study estimated a 4.7-fold increased relative risk of limb-reduction defects in infants exposed *in utero* to sex hormones (OCs, hormonal withdrawal tests for pregnancy or attempted treatment for threatened abortion). Some exposures involved only a few days of treatment. Data suggest risk of limb-reduction defects in exposed fetuses is somewhat less than 1/1000 live births. In a large prospective study, cardiovascular defects in children born to women who received female hormones, including OCs, during early pregnancy occurred at 18.2/1000 births, compared to 7.8/1000 for children not so exposed *in utero*. These results are statistically significant. A Welsh study found a statistically significant excess of neural tube defects among offspring of prior OC users (within 3 months) than among controls. The incidence of twin births may be increased for women who conceive shortly after discontinuing OC use. In the past, female sex hormones were used during pregnancy in an attempt to treat threatened or habitual abortion. There is evidence that estrogens are ineffective, and there is no evidence from well controlled studies that progestogens are effective for these uses. There is some evidence that triploidy and possibly other types of polyploidy are increased among abortuses from women who become pregnant soon after ceasing OCs. Embryos with these anomalies are virtually always aborted spontaneously. Whether there is an overall increase in spontaneous abortion of pregnancies conceived soon after stopping OCs is unknown. If the patient has not adhered to the prescribed schedule, consider possible pregnancy at the first missed period (or 45 days from the last menstrual period if progestogen-only OCs are used) and discontinue OC use until pregnancy has been ruled out. For any patient who has missed two consecutive periods, rule out pregnancy before continuing the OC. If pregnancy is confirmed, tell the patient about potential risks to the fetus and discuss advisability of continuing the pregnancy. Women who discontinue OCs to become pregnant should use an alternate form of contraception for a period of time before attempting to conceive. A 3-month period is supported by a study suggesting increased frequency of neural tube defects in women impregnated during the first 3 months after cessation of OC use. Do not use progestogen-only or progestogen-estrogen combinations to induce withdrawal bleeding as a pregnancy test. 6. *Gall Bladder Disease* Studies report increased risk of gall bladder disease in OC or estrogen users. In one study, an increased risk appeared after 2 years of use and doubled after 4-5 years. In another study, an increased risk was apparent between 6 and 12 months. 7. *Carbohydrate and Lipid Metabolic Effects* Because a decrease in glucose tolerance has been observed in a significant percentage of patients on OCs, prediabetic and diabetic OC users should be carefully observed. An increase in triglycerides and total phospholipids has been observed in OC users but its clinical significance is unknown. 8. *Elevated Blood Pressure* An increase in blood pressure has been reported with OC use. Hypertension may occur within a few months of beginning OCs. In the first year of use, incidence of hypertension may be no higher in OC users than in nonusers. Incidence in users increases with exposure and in the fifth year of use is 2.5-3 times that in the first year. Age is strongly correlated with hypertension in OC users. Women with a history of elevated blood pressure (hypertension), preexisting renal disease, history of toxemia or elevated blood pressure during pregnancy, familial tendency to hypertension or its consequences, or history of excessive weight gain or fluid retention during the menstrual cycle may be more likely to develop elevated blood pressure when given OCs and should be monitored closely. Even though elevated blood pressure may remain within the "normal" range, closely watch elevations, particularly for women with other risk factors for cardiovascular disease or stroke. High blood pressure may or may not persist after OC discontinuation. 9. *Headache* Discontinue OC and evaluate the cause of onset or exacerbation of migraine or development of a new pattern of headache which is recurrent, persistent, or severe. 10. *Bleeding Irregularities* Breakthrough bleeding, spotting, and missed menses often make users discontinue OCs. In breakthrough bleeding, as in all cases of irregular bleeding from the vagina, consider nonfunctional causes. In undiagnosed persistent or recurrent abnormal bleeding from the vagina, use adequate diagnostic measures to rule out pregnancy or malignancy. If pathology has been excluded, time or another formulation may solve the problem. While potentially useful in minimizing menstrual irregularity, change to an OC with a higher estrogen content only if necessary since this may increase the risk of thromboembolic disease. Women with a history of oligomenorrhea or secondary amenorrhea or young women without regular cycles may tend to remain anovulatory or to become amenorrheic after OC discontinuation. Women with these preexisting problems should be advised of this and encouraged to use other contraceptive methods. Post-use anovulation, possibly prolonged, may occur in women without previous irregularities. A higher incidence of galactorrhea and of pituitary tumors (e.g., adenomas) has been associated with amenorrhea in former users compared with nonusers. One study reported a 16-fold increased incidence of pituitary prolactin-secreting tumors among patients with postpill amenorrhea when galactorrhea was present. 11. *Infertility* There is evidence of impairment of fertility in women discontinuing OCs in comparison with other contraceptive methods, which appears to be independent of duration of use. While impairment diminishes with time, there is an appreciable difference in the results in nulliparous women for OC and other groups 30 months after discontinuation of birth control. For parous women the difference is not apparent 30 months after cessation of contraception. 12. *Ectopic Pregnancy* Ectopic as well as intrauterine pregnancy may occur in OC failure. In progestogen-only OC failures, the ratio of ectopic to intrauterine pregnancies is higher than in nonusers, since the drugs are more effective in preventing intrauterine than ectopic pregnancies. 13. *Breast Feeding* OCs in the postpartum period may interfere with lactation by decreasing quantity and quality of breast milk. A small fraction of OC hormonal agents has been identified in milk of mothers receiving OCs. Effects, if any, on the breast-fed child have not been determined. If feasible, defer OC use until the infant has been weaned.

Precautions *GENERAL* 1. Take a complete medical and family history before starting OCs. Pretreatment and periodic physical exams should include special reference to blood pressure, breasts, abdomen and pelvic organs, including Papanicolaou smear and relevant lab tests. As a general rule, OCs should not be prescribed for longer than 1 year without another physical. 2. Under the influence of estrogen-progestogen preparations, preexisting uterine leiomyomata may enlarge. 3. Observe patients with a history of psychic depression and discontinue OCs if depression recurs to a serious degree. Patients becoming significantly depressed while taking OCs should stop the OC and use an alternate method of contraception to determine whether the symptom is drug related. 4. OCs may cause some fluid retention. Prescribe with caution, and only with careful monitoring, in patients with conditions that might be aggravated by fluid retention, such as convulsive disorders, migraine syndrome, asthma or cardiac, hepatic or renal insufficiency. 5. Patients with a past history of jaundice during pregnancy have an increased risk of recurrence while using OCs. Discontinue OC if jaundice develops. 6. Steroid hormones may be poorly metabolized in patients with impaired liver function and should be administered with caution in such patients. 7. OC users may have disturbances in normal tryptophan metabolism that may result in a relative pyridoxine deficiency. The clinical significance is unknown. 8. Serum folate levels may be depressed by OC use. Since the pregnant woman is predisposed to folate deficiency and incidence of folate deficiency increases with increasing gestation, if a woman becomes pregnant shortly after stopping OCs, she may have a greater chance of developing folate deficiency and related complications. 9. Advise the pathologist of OC use when relevant specimens are submitted. 10. Certain endocrine and liver function tests and blood components may be affected by estrogen-containing OCs. For example: a. Increased sulfobromophthalein retention. b. Increased prothrombin and factors VII, VIII, IX, and X; decreased antithrombin 3; increased norepinephrine-induced platelet aggregability. c. Increased thyroid binding globulin (TBG) leading to increased circulating total thyroid hormone, as measured by protein-bound iodine (PBI), T4 by column, or T4 by radioimmunoassay. Free T3 resin uptake is decreased, reflecting the elevated TBG; free T4 concentration is unaltered. d. Decreased pregnanediol excretion. e. Reduced response to metyrapone test. f. Increased phospholipids and triglycerides. g. Temporarily decreased glucose tolerance. 11. Contact lens wearers who develop visual changes or changes in lens tolerance should be assessed by an ophthalmologist and temporary or permanent cessation of wear considered. DRUG INTERACTIONS OCs may be less effective and there may be increased breakthrough bleeding from interactions with rifampin, isoniazid, ampicillin, tetracycline, neomycin, penicillin V, chloramphenicol, sulfonamides, nitrofurantoin, barbiturates, phenytoin, primidone, analgesics, tranquilizers, antimigraine preparations, antihistamines, and griseofulvin. OCs may alter effectiveness of such other drugs as oral anticoagulants, anticonvulsants, tricyclic antidepressants, antihypertensive agents (e.g., guanethidine), vitamins, hypoglycemic agents, tranquilizers, hypnotic preparations, theophylline, and beta blockers. *CARCINOGENESIS* See Warnings. *PREGNANCY* Pregnancy category X. See Contraindications and Warnings. *NURSING MOTHERS* See Warnings.

Adverse Reactions An increased risk of the following serious adverse reactions has been associated with OC use (see Warnings): thrombophlebitis, thrombosis, pulmonary embolism, coronary thrombosis, cerebral thrombosis, mesenteric thrombosis, liver tumors, cerebral hemorrhage, hypertension, gall bladder disease, congenital anomalies, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis, Raynaud's disease, arterial thromboembolism. The following adverse reactions have been reported in OC users and are believed to be drug related: bleeding irregularities (breakthrough bleeding, spotting, missed menses during treatment, amenorrhea after treatment), gastrointestinal symptoms (nausea, vomiting, bloating, abdominal cramps, colitis), dysmenorrhea, infertility after discontinuance of treatment, edema, chloasma or melasma which may persist after drug is discontinued, breast changes (tenderness, enlargement, and secretion), intolerance to contact lenses, changes in corneal curvature (steepening), change in weight (increase or decrease), change in cervical erosion and cervical secretion, possible diminution of lactation when given immediately postpartum, cholestatic jaundice, migraine, increase in size of uterine leiomyomata, rash (allergic), mental depression, reduced tolerance to carbohydrates, vaginal candidiasis, prolactin-secreting pituitary tumors, chilblains. The following adverse reactions have been reported in OC users and the association has been neither confirmed nor refuted: premenstrual-like syndrome, cataracts, changes in libido, chorea, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, hirsutism, loss of hair, erythema multiforme, erythema nodosum, hemorrhagic eruptions, vaginitis, porphyria, impaired renal function, malignant nephrosclerosis (hemolytic uremic syndrome), malignant hypertension, acute renal failure. **Information for the Patient** (See Patient Package Insert)

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